

ORDER NO.SIMMC0401003A1

E1

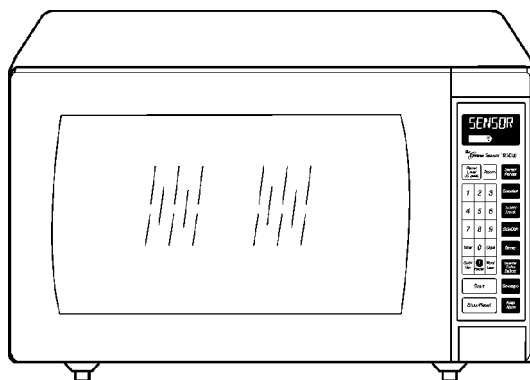
Service Manual

Microwave Oven



NN-P794 NN-T794SF / NN-T784SF NN-T774SF / NN-T764SF
NN-T754SF / NN-H764 NN-S754 / NN-H744 NN-S744 / NN-
H724
APH(USA)
CPH(CANADA)

Please file and use this specified manual together with the service manual for Model NN-S560BF/WF(ORDER NO. SIMMC0001002C3).



SPECIFICATIONS

Specifications:

Models:	P794 APH	T794 APH T784 APH T764 APH T754 APH	T774 APH	H764 APH S754 APH	H744 APH	S744 APH	H724 APH	P794 CPH	H764 CPH
Specifications:									
Power Source:	120V AC Single Phase, 60Hz								
Power Requirement:	1460W	1460W	1460W	1460W	1460W	1460W	1460W	1460W	1460W
Output(IEC705-88):	1250W	1250W	1200W	1250W	1250W	1200W	1200W	1200W	1200W
Microwave Frequency:	2450MHz								
Timer:	30 min. / Stage (HIGH Power) ~ 5 Stage Maximum 99 min. 99 sec. / Stage (Other Power Levels) ~ 5 Stage Maximum								
Outside Dimensions:	21 ⁷ / ₈ "(555mm)(D) x 19 ⁹ / ₁₆ "(497mm)(W) x 11 ¹⁵ / ₁₆ "(304mm)(H)								
Oven Cavity Dimensions:	16 ⁷ / ₁₆ "(418mm)(D) x 18 ¹ / ₂ "(470mm)(W) x 9"(228mm)(H)								
Weight:	31 lbs. / 14.3kg								
PbF	This product with PbF								
Output power: IEC705-88 Test Procedure									
Specifications subject to change without notice.									

© 2004 Shanghai Matsushita Microwave Oven Co., Ltd. / All rights reserved. Unauthorized copying and distribution is a violation of law.

WARNING

1. This product should be serviced only by trained, qualified personnel.
2. Though this product has been manufactured in compliance with:
"Federal Performance Standard 21 CFR Subchapter J"(D.H.H.S): U.S.A. models
or "Radiation Emitting Devices Act"(Health and Welfare Canada): Canadian models
it is very important all repairs should be made in accordance with procedures described in this manual to avoid being exposed to excessive microwave radiation.
3. Check for radiation leakage before and after every servicing according to the "procedure for measuring radiation leakage."
4. If the unit cannot be repaired on site, advise the customer not to use until unit is repaired.
5. Any serviceman who learns of any accident pertaining to microwave radiation leakage including the oven operating with open door should immediately notify the appropriate address listed below and Center for Devices and Radiological Health, DHHS.

IN U.S.A.
(PASC) Panasonic Services Company
50 Meadowland Parkway,
Secaucus, New Jersey 07094
Attention: Technical Service Division.
(201)348-7000

IN PUERTO RICO
(PSC)

PSC
San Gabriel Industrial Park
65th Infantry Ave. Km.9.5
Carolina, Puerto Rico 00985
(787)750-4300
Panasonic Canada Inc.
5770 Ambler Drive, Mississauga,
Ontario, L4W2T3
(905)624-5010

IN CANADA
(PCI)

6. There are special components used in the microwave oven which are important for safety. These parts are marked with a $\triangle$ on the replacement parts list. It is essential that these critical parts should be replaced only with the manufacture's specified parts to prevent microwave leakage, shock, fire, or other hazards. Do not modify the original design.

PRECAUTIONS TO BE OBSERVED BEFORE AND DURING SERVICING TO AVOID POSSIBLE EXPOSURE TO EXCESSIVE MICROWAVE ENERGY

- (A) Do not operate or allow the oven to be operated with the door open.
- (B) Make the following safety checks on all ovens to be serviced before activating the magnetron or other microwave source, and make repairs as necessary:
 - (1) Interlock operation
 - (2) Proper door closing
 - (3) Seal and sealing surfaces (arcing, wear, and other damage)
 - (4) Damage to or loosening of hinges and latches.
 - (5) Evidence of dropping or abuse
- (C) Before turning on microwave power for any service test or inspection within the microwave generating compartments, check the magnetron, waveguide or transmission line, and cavity for proper alignment, integrity and connections.
- (D) Any defective or misadjusted components in the interlock, monitor, door seal, and microwave generation and transmission systems shall be repaired, replaced, or adjusted by procedures described in this manual before the oven is released to the owner.
- (E) A microwave leakage check to verify compliance with the Federal Performance Standard should be performed on each oven prior to release to the owner.

CAUTION

About lead free solder (PbF)

Distinction of PbF PCB: PCBs (manufactured) using lead free solder will have a PbF stamp on the PCB.

- Caution:**
- Pb free solder has a higher melting point than standard solder; Typically the melting point is 30 - 40°C higher. Please use a high temperature soldering iron. In case of the soldering iron with temperature control, please set it to 370 ± 10°C.
 - Pb free solder will tend to splash when heated too high (about 600°C).

DANGER OF HIGH VOLTAGE AND HIGH TEMPERATURE (HOT/LIVE) OF THE INVERTER POWER SUPPLY (U)

INVERTER WARNING

This Inverter board looks like a regular PCB. However, this PCB drives the magnetron tube with extremely high voltage and high current.

NEW H.V.

IT HAS: 1. Very high voltage and high current circuits.

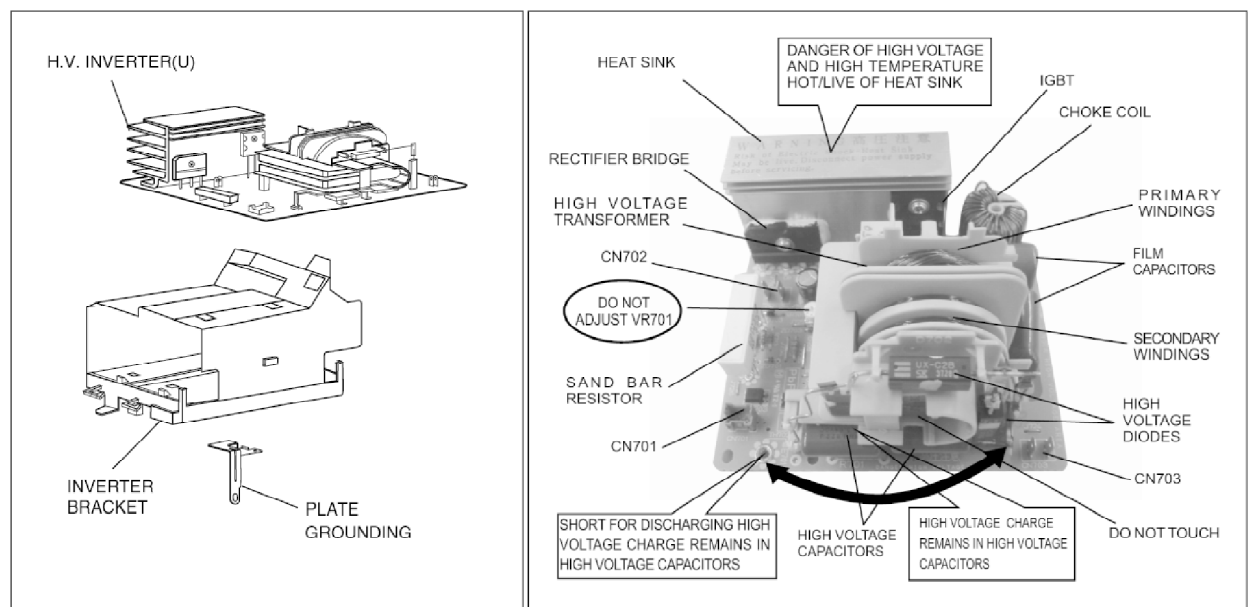
It functions the same as the high voltage transformer and high voltage capacitor in ordinary microwave ovens.

2. Aluminum heat sink that is energized with very high voltage and high heat energy.
3. Very high voltage which may remain in circuitry even when oven is off. High voltage charge may remain in the capacitors on the board.

DO NOT:

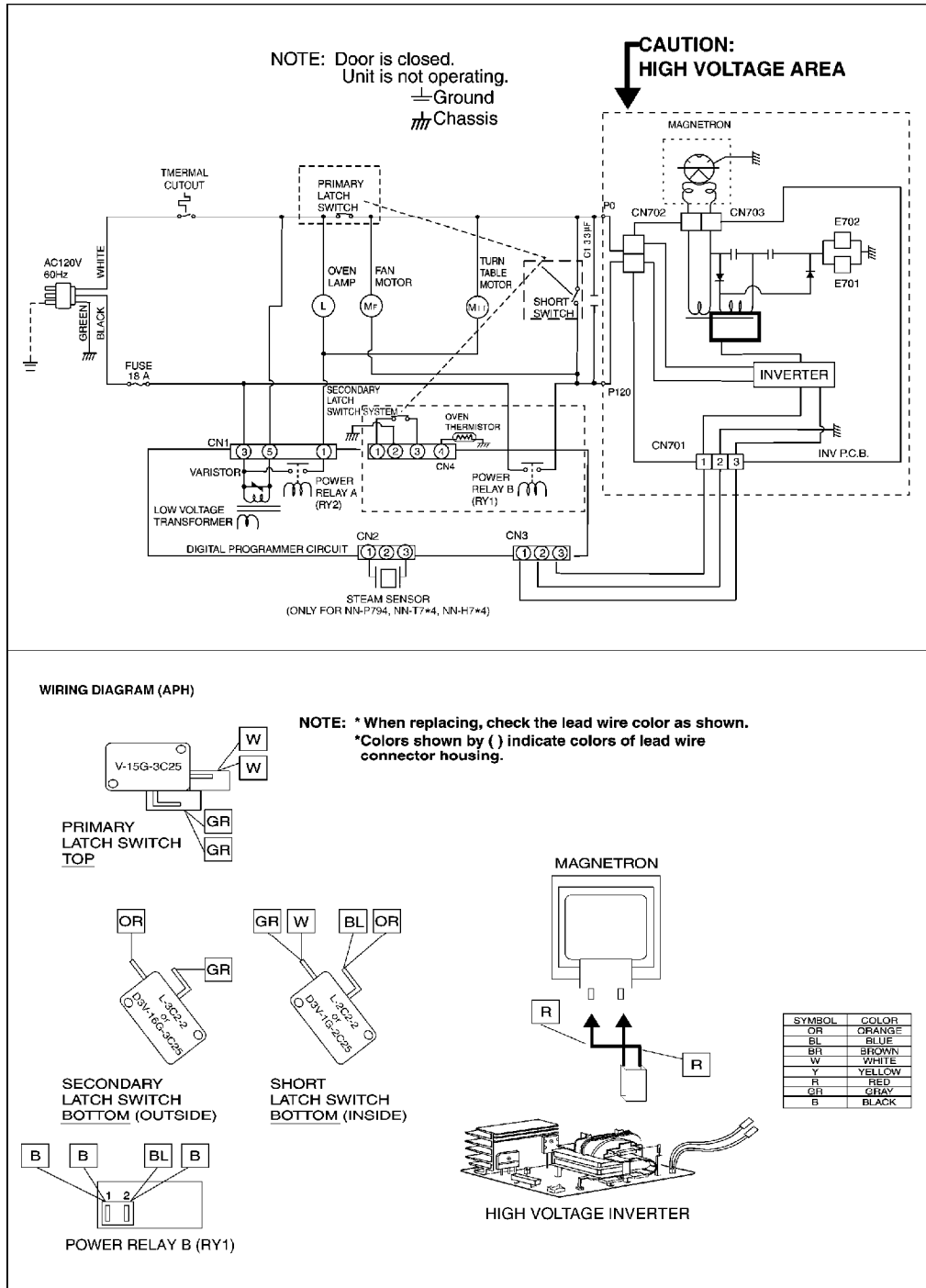
- * 1. Do not touch circuitry because it has very hot (high voltage) circuitry. Even when replacing board, extreme care should be taken to avoid possible electric shock hazards. High voltage charge may remain in circuits.
- * 2. Do not touch aluminum heat sink because it is energized with very high voltage and is also very hot in high heat energy.
- * 3. Do not try to adjust or tamper with preset control on the Inverter board because it is very dangerous to adjust without proper test equipment.
- * 4. Do not test oven while Inverter grounding plate or screws are loose. It is very dangerous to operate H.V. Inverter Circuit (U) with loose mounting screws or if improperly grounded.
- * 5. For USA only:
Do not try to repair Inverter PCB because it is very dangerous to repair. Replace as a complete High Voltage Inverter Circuit unit and return fully re-packed in original shipping box and shipping materials.

INVERTER POWER SUPPLY

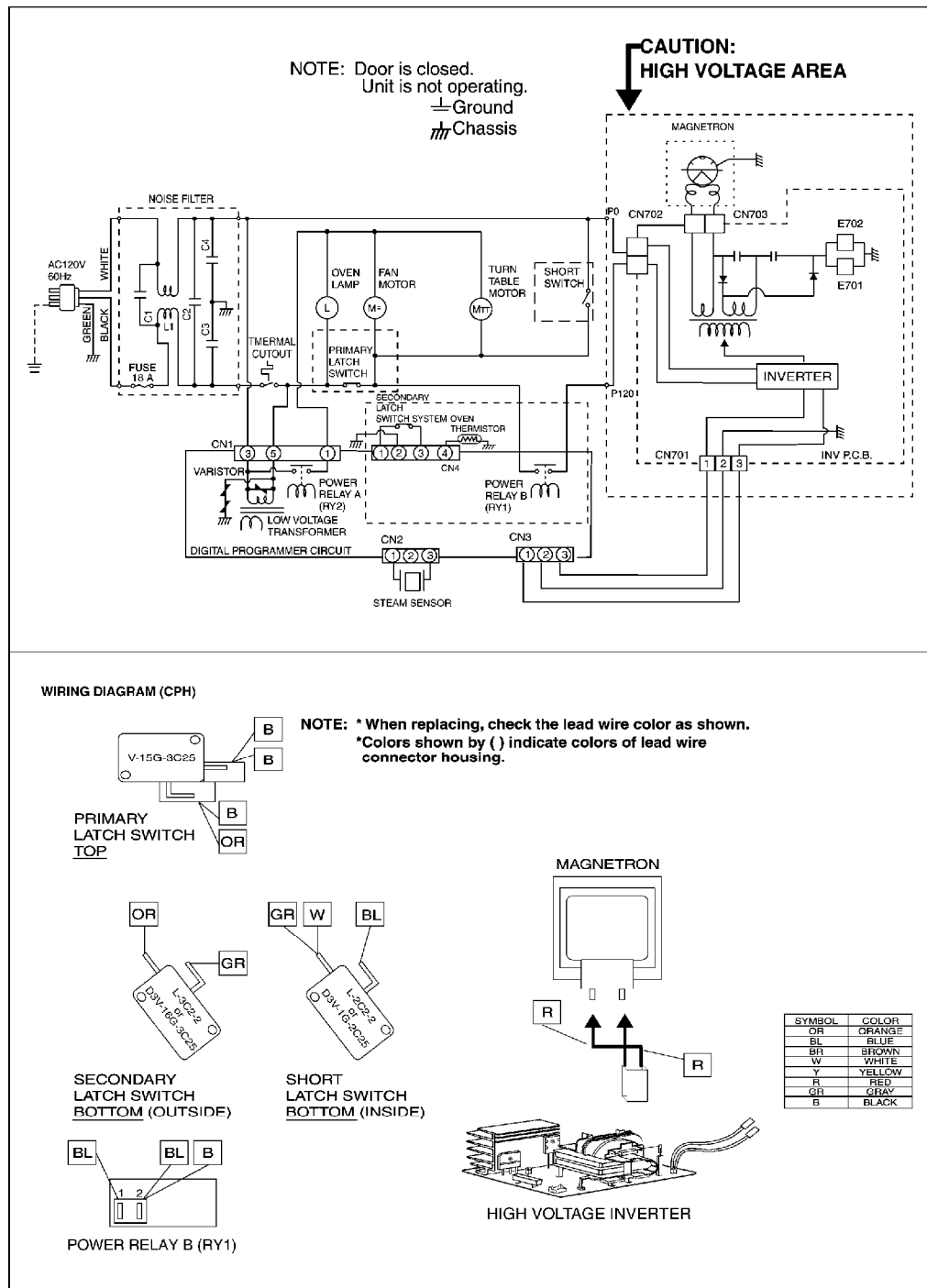


1. SCHEMATIC DIAGRAM

1.1. APH



1.2. CPH



2. MEASUREMENTS AND ADJUSTMENTS

WARNING

- * For continued protection against radiation hazard, replace only with identical replacement parts (For touch models Part No. J61424T00AP, Type No. V-15G-3C25 for Primary latch switch; Part No. J61414T00AP, Type No. D3V-16G-3C25 for Secondary latch switch and Part No. J61784T00AP, Type No. D3V-1G-2C25 for short switch.)
- * When the 18 Amp. fuse is blown due to the operation of the short switch, you must replace power relay B (Part No. AEGG5G1A18, Type No. G5G-1A12VDC), Primary latch switch and the short switch. Then follow the installation procedures below.
- * Interlock switch replacement In replacing faulty switches, be sure mounting tabs are not bent, broken or otherwise deficient in their ability to hold the switches.
- * Refer to schematic diagram to ensure proper connection.

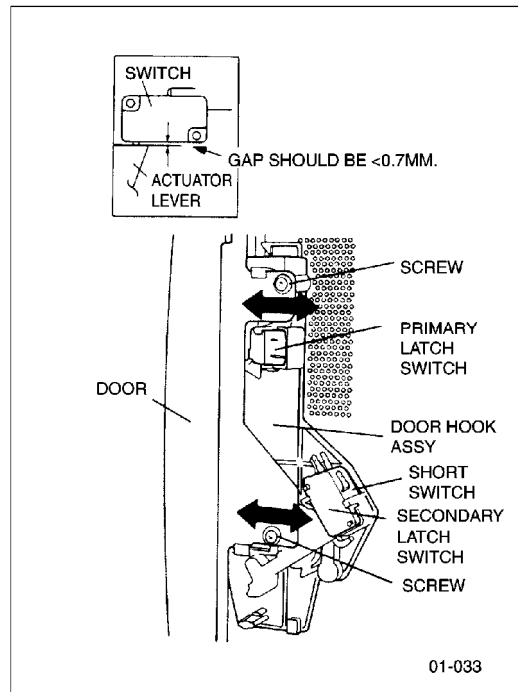
2.1. Adjustment of primary latch switch, secondary latch switch and short switch.

- 1. Mount the Primary latch switch, the Secondary latch switch and the short switch to the door hook assembly as shown in ILL.**

NOTE:

No specific individual adjustments during installation of the Primary latch switch, Secondary latch switch or Short switch to the door hook are required.

- 2. When mounting the door hook assembly to the oven assembly, adjust the door hook assembly by moving it in the direction of the arrows in the illustration so that the oven door will not have any play in it. Check for play in the door by pulling the door assembly. Make sure that the latch keys move smoothly after adjustment is completed. Completely tighten the screws holding the door hook assembly to the oven assembly.**
- 3. Reconnect the short switch and check the continuity of the monitor circuit and all latch switches again by following the component test procedures.**



2.2. Measurement of microwave output

The output power of the magnetron can be determined by performing IEC standard test procedures. However, due to the complexity of IEC test procedures, it is recommended to test the magnetron using the simple method outlined below.

Necessary Equipment:

*1 liter beaker *Glass thermometer / *Wrist watch or stopwatch

NOTE:

Check the line voltage under load. Low voltage will lower the magnetron output. Take the temperature readings and heating time as accurately as possible.

1. Fill the beaker with exactly one liter of tap water. Stir the water using the thermometer and record the water's temperature. (recorded as T1).
2. Place the beaker on the center of glass tray. / Set the oven for High power and heat it for exactly one minute.
3. Stir the water again and read the temperature of the water. (recorded as T2).
4. The normal temperature rise at High power level for each model is as shown in table.

TABLE (1L-1min.test)

RATED OUTPUT	TEMPERATURE RISE
1200W(IEC705-88)	Min. 18.5°F(10.3°C)
1300W(IEC705-88)	Min. 19.8°F(11.1°C)

3. PROCEDURE FOR MEASURING MICROWAVE ENERGY LEAKAGE

WARNING

Check for radiation leakage after every servicing. Should the leakage be more than 2 mW/cm² (1mW/cm² for Canada) inform PASC, PSC, or PCI immediately. After repairing or replacing any radiation safety device, keep a written record for future reference, as required by D.H.H.S. and Health and Welfare Canada regulation. This requirement must be strictly observed. In addition, the leakage reading must be recorded on the service repair ticket while in the customer's home.

NOTE:

The U.S. Government standard is 5 mW/cm² while in the customer's home. 2mW/cm² stated here is our own voluntary standard. (1mW/cm² for Canada)

3.1. Equipment

- Electromagnetic radiation monitor
- Glass thermometer 212°F or 100°C
- 600cc glass beaker

3.2. Procedure for measuring radiation leakage

Note before measuring.

- Do not exceed meter full scale deflection. Leakage monitor should initially be set to the highest scale.
 - To prevent false readings the test probe should be held by the grip portion of the handle only and moved along the shaded area in Figure no faster than 1 inch/sec (2.5cm/sec).
 - Leakage with the outer panel removed less than 5mW/cm².
 - Leakage for a fully assembled oven with door normally closed less than 2mW/cm² (1mW/cm² for Canada).
 - Leakage for a fully assembled oven [Before the latch switch (primary) is interrupted] while pulling the door less than 2mW/cm².
1. Pour 275 ± 15cc (9ozs± 1/2oz) of 20°C ± 5°C (68° ± 9°F) water in a beaker which is graduated to 600cc, and place in the center of the oven.

2. Set the radiation monitor to 2450MHz and use it following the manufacturer's recommended test procedure to assure correct results.
3. When measuring the leakage, always use the 2 inch (5cm) spacer supplied with the probe.
4. Tap the start pad or set the timer and with the magnetron oscillating, measure the leakage by holding the probe perpendicular to the surface being measured.

3.2.1. Measurement with the outer panel removed.

Whenever you replace the magnetron, measure for radiation leakage before the outer panel is installed and after all necessary components are replaced or adjusted. Special care should be taken in measuring around the magnetron.

WARNING Avoid contacting any high voltage parts.
--

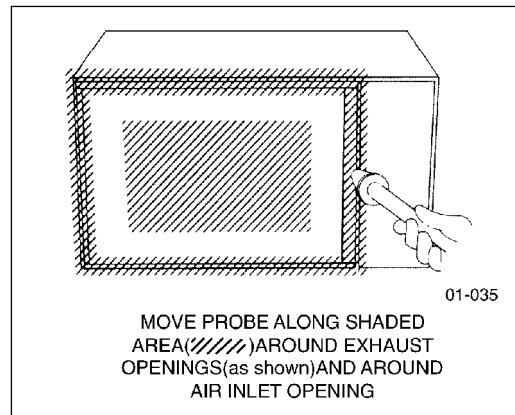
3.2.2. Measurements with a fully assembled oven.

After all components, including outer panel are fully assembled, measure for radiation leakage around the door periphery, the door viewing window, the exhaust opening and air inlet openings.

3.3. Record keeping and notification after measurement

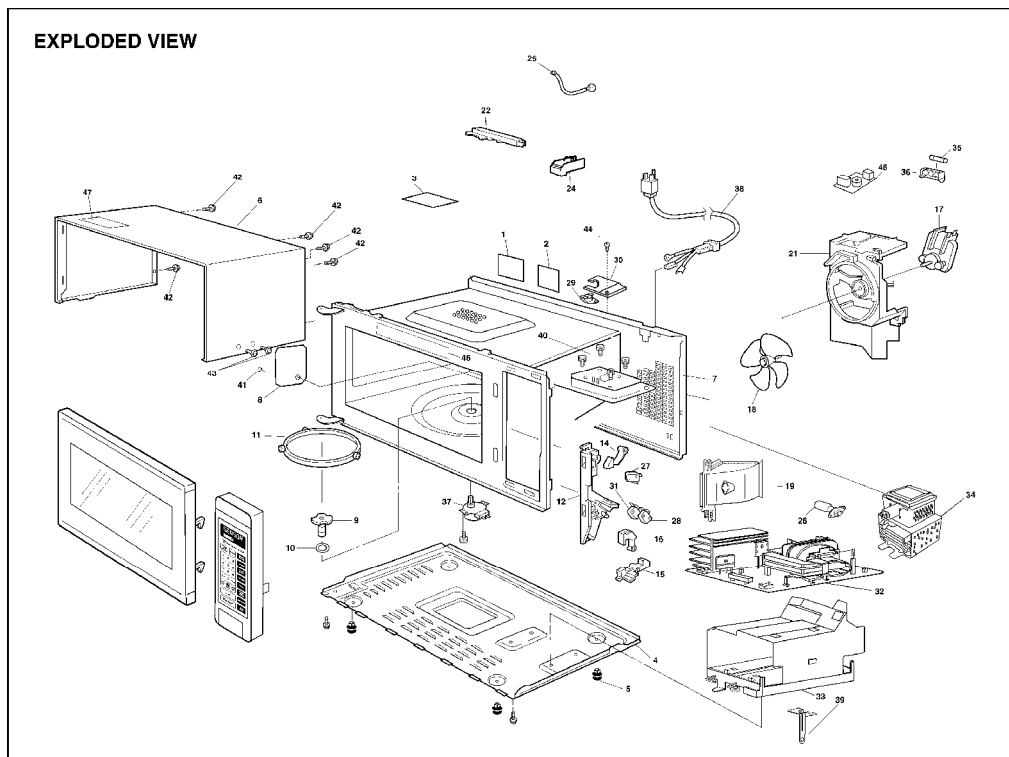
- After any adjustment or repair to a microwave oven, a leakage reading must be taken. Record this leakage reading on the repair ticket even if it is zero.
A copy of this repair ticket and the microwave leakage reading should be kept by repair facility.
- Should the radiation leakage be more than 2 mW/cm² (1mW/cm for Canada) after determining that all parts are in good condition, functioning properly, and genuine replacement parts as listed in this manual have been used, immediately notify PASC, PSC or PCI.

3.4. At least once a year, have the radiation monitor checked for calibration by its manufacturer.



4. EXPLODED VIEW AND PARTS LIST

4.1. EXPLODED VIEW



4.2. PARTS LIST

NOTE:

1. When ordering replacement part(s), please use part number(s) shown in this part list.
Do not use description of the part.
2. Important safety notice:
Components identified by  mark have special characteristics important for safety.

When replacing any of these components, use only manufacture's specified parts.

NOTE:

“A” parts are supplied by MOD (Japan)

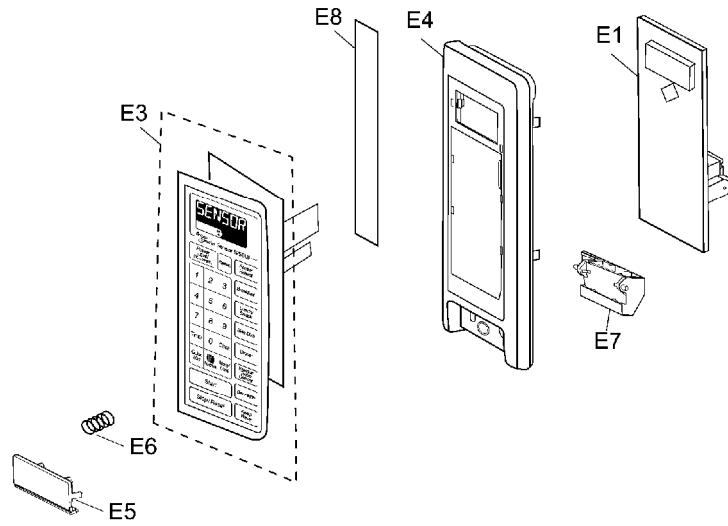
“F” parts are supplied by SIMMC (China)

Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
1		F00064W70AP	CAUTION LABEL	1	P794 APH, T7*4SF APH
1		F00069660AP	CAUTION LABEL	1	H7*4 APH, S7*4 APH
1		F00067600CP	CAUTION LABEL	1	CPH
2		F00076J00BAP	NAME PLATE	1	H764BF APH
2		F00076J00HAP	NAME PLATE	1	H764WF APH
2		F00076J50BAP	NAME PLATE	1	H744BF APH
2		F00076J50HAP	NAME PLATE	1	H744WF APH
2		F00076J70BAP	NAME PLATE	1	H724BF APH
2		F00076J70HAP	NAME PLATE	1	H724WF APH
2		F00076J30BAP	NAME PLATE	1	S754BF APH
2		F00076J30HAP	NAME PLATE	1	S754WF APH
2		F00076J60BAP	NAME PLATE	1	S744BF APH
2		F00076J60HAP	NAME PLATE	1	S744WF APH
3		F00334W00AP	FUSE LABEL	1	
4		F10016H60AP	BASE	1	
5		F10084T00AP	RUBBER FOOT	4	
6		F110D6H60BAP	CABINET BODY (U)	1	P794BF APH/CPH
6		F110D6H60HAP	CABINET BODY (U)	1	P794WF APH/CPH
6		F110D5X00SAP	CABINET BODY (U)	1	P794SF APH/CPH, T794SF APH, T784SF APH, / T764SF APH, T754SF APH
6		F110D4W70NAP	CABINET BODY (U)	1	T774SF APH
6		F110D5K00BAP	CABINET BODY (U)	1	H7*4BF APH/CPH, S7*4BF APH
6		F110D5X20HCP	CABINET BODY (U)	1	H7*4WF APH/CPH, S7*4WF APH
7		F200A5X20AP	OVEN~ (U)	1	P794 APH/CPH, T794SF APH, T784SF APH, T774SF APH, T764SF APH, H7*4 APH/CPH
7		F200A5X30AP	OVEN (U)	1	T754SF APH, S7*4 APH
8		F20555K00AP	COVER	1	
9		F21315Y00AP	PULLY SHAFT	1	
10		F2177-F80	WASHER	1	
11		F290D9330AP	ROLLER RING (U)	1	
12		F3020-1200	DOOR HOOK	1	
14		F3136-1200	HOOK LEVER A	1	
15		F31374650AP	HOOK LEVER B	1	
16		F31384650AP	HOOK LEVER C	1	
17		F400A5Y00AP	FAN MOTOR	1	AC120V, SINGLE PHASE, 60Hz
18		F40084T00AP	FAN BLADE	1	
19		F40254W00AP	AIR GUIDE A	1	
21		F41445W00AP	ORIFICE	1	
22		F64508660AP	SENSOR COVER B	1	P794 APH/CPH, T794SF APH, T784SF APH, T774SF APH, T764SF APH, H7*4 APH/CPH

Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
24		F65434W00AP	SENSOR COVER C	1	P794 APH/CPH, T794SF APH, T784SF APH, T774SF APH, T764SF APH, H7*4 APH/CPH
25		A607S4M00AP	STEAM SENSOR	1	P794 APH/CPH, T794SF APH, T784SF APH, T774SF APH, T764SF APH, H7*4 APH/CPH
26		F612E4W00AP	INCANDESCENT LAMP (U)	1	125V, 60Hz, 20W
27		J61424T00AP	MICRO SWITCH	1	(PRIMARY LATCH SWITCH) (V-15G-3C25)
28		J61414T00AP	MICRO SWITCH	1	(SECONDARY LATCH SWITCH) (D3V-16G-3C25)
29		F61455L00CP	THERMAL CUTOFF	1	105°C
30		F66264W00AP	THERMAL CUTOFF INSULATION BRACKET	1	
31		J61784T00AP	MICRO SWITCH	1	(SHORT SWITCH) (D3V-1G-2C25)
32		A606Y6G00AP	H.V.INVERTER (U)	1	
33		F65856K10AP	INVERTER BRACKET	1	P794 APH, T7*4SF APH
33		F65856K50AP	INVERTER BRACKET	1	P794 CPH, H7*4 APH/CPH, S7*4 APH
34		2M75P1-21	MAGNETRON	1	APH
34		2M261-M32G	MAGNETRON	1	CPH
35		B62308250AP	FUSE	1	18A/120V, 60Hz
36		F62315G10XN	FUSE HOLDER	1	APH
37		F63265G60AP	TURNTABLE MOTOR	1	
38		F900C4T60CP	AC CORD W/PLUG	1	P7*4 APH, T7*4SF APH
38		F900C4T00AP	AC CORD W/PLUG	1	H7*4 APH, S7*4 APH
38		F900C4W10CP	AC CORD W/PLUG	1	CPH
39		F66626H60AP	GROUNDING PLATE	1	
40		XTWFA4+12T	SCREW	4	FOR MAGNETRON
41		F90804W00AP	CANOE CLIP	1	FOR COVER
42		XTTANE4T12A0	SCREW	5	FOR CABINET BODY
43		XTTFA4+8BFZ	SCREW	2	FOR CABINET BODY SIDE (P794BF, H7*4BF, S7*4BF)
43		XTTFA4+8BCR	SCREW	2	FOR CABINET BODY SIDE / (P794SF/WF, T7*4SF APH, H7*4WF, S7*4WF)
44		XTWAFE4+8S	SCREW	1	FOR THERMAL CUTOFF
45		J692Y4T00CPR	NOISE FILTER	1	CPH
46		F03346J50AP	MENU LABEL	1	H744BF/WF APH
46		F03346J70AP	MENU LABEL	1	H724BF/WF APH
46		F03346J60AP	MENU LABEL	1	S744BF/WF APH
46		F03346J80AP	MENU LABEL	1	S724BF/WF APH
47		F02245Y00AP	CAUTION LABEL	1	P794SF APH/CPH, T794SF APH, T784SF APH, / T764SF APH, T754SF APH

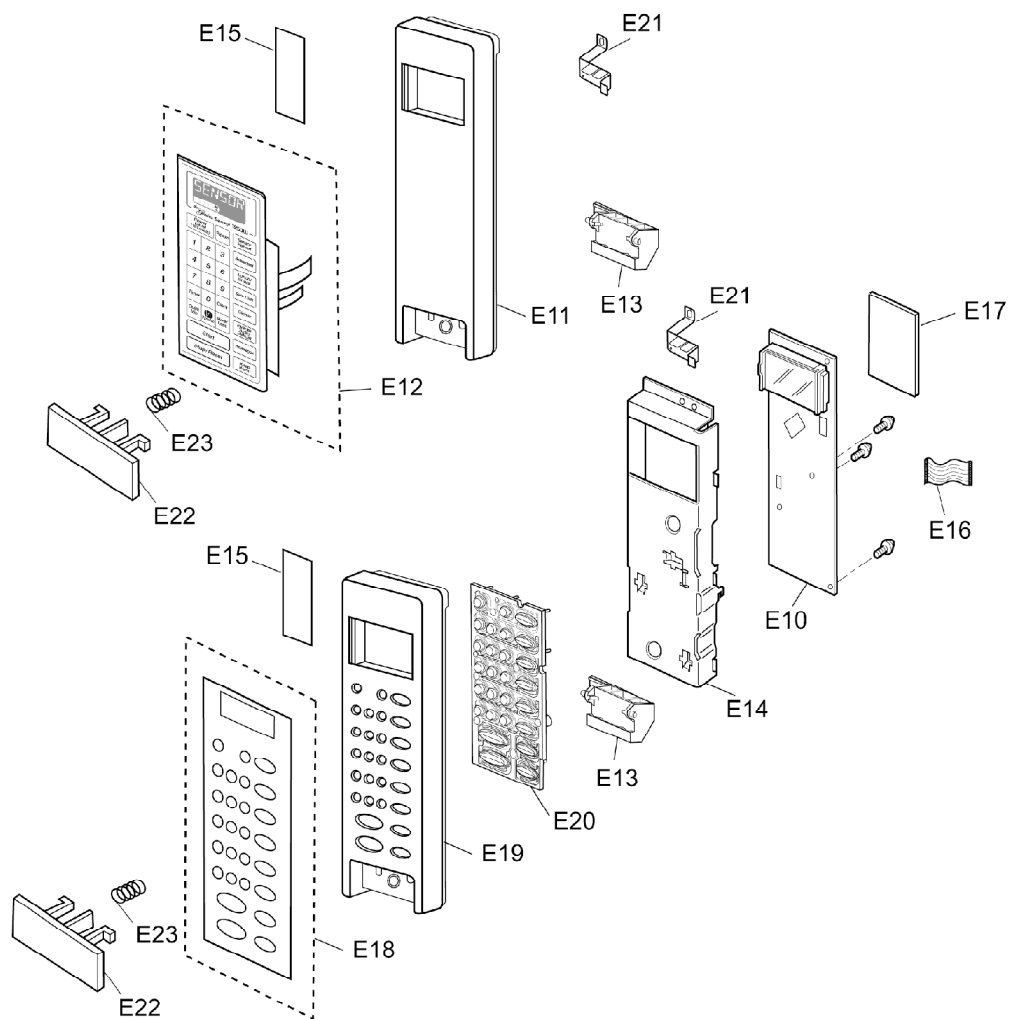
4.3. ESCUTCHEON BASE ASSEMBLY

4.3.1. NN-H7*4 APH/CPH, NN-S7*4 APH



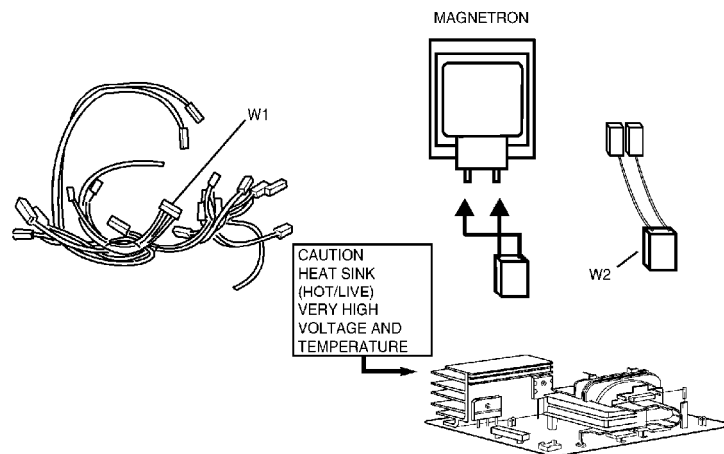
Ref. No.	Part No.	Part Name & Description	Pcs/Set	Remarks
E1	F603L6J00AP	D.P.CIRCUIT (AU)	1	H764BF/WF APH
E1	F603L6J50AP	D.P.CIRCUIT (AU)	1	H744BF/WF APH, H724BF/WF APH
E1	F603L6J00CP	D.P.CIRCUIT (AU)	1	H764BF/WF CPH
E1	F603L6J30AP	D.P.CIRCUIT (AU)	1	S754BF/WF APH
E1	F603L6J60AP	D.P.CIRCUIT (AU)	1	S744BF/WF APH
E3	F630Y6J00BAP	MEMBRANE SWITCH (U)	1	H764BF APH
E3	F630Y6J00HAP	MEMBRANE SWITCH (U)	1	H764WF APH
E3	F630Y6J50BAP	MEMBRANE SWITCH (U)	1	H744BF APH
E3	F630Y6J50HAP	MEMBRANE SWITCH (U)	1	H744WF APH
E3	F630Y6J70BAP	MEMBRANE SWITCH (U)	1	H724BF APH
E3	F630Y6J70HAP	MEMBRANE SWITCH (U)	1	H724WF APH
E3	F630Y6J00BCP	MEMBRANE SWITCH (U)	1	H764BF CPH
E3	F630Y6J00HCP	MEMBRANE SWITCH (U)	1	H764WF CPH
E3	F630Y6J30BAP	MEMBRANE SWITCH (U)	1	S754BF APH
E3	F630Y6J30HAP	MEMBRANE SWITCH (U)	1	S754WF APH
E3	F630Y6J60BAP	MEMBRANE SWITCH (U)	1	S744BF APH
E3	F630Y6J60HAP	MEMBRANE SWITCH (U)	1	S744WF APH
E4	F80346J00BAP	ESCUTCHEON BASE	1	H7*4BF APH/CPH, S7*4BF APH
E4	F80346J00HAP	ESCUTCHEON BASE	1	H7*4WF APH/CPH, S7*4WF APH
E5	F80726J00BAP	DOOR OPENING BUTTON	1	H7*4BF APH/CPH, S7*4BF APH
E5	F80726J00HAP	DOOR OPENING BUTTON	1	H7*4WF APH/CPH, S7*4WF APH
E6	F80375K00AP	COOK BUTTON SPRING	1	
E7	F82564W00AP	DOOR OPENING LEVEL	1	
E8	F00076J00BCP	NAME PLATE	1	H764BF CPH
E8	F00076J00HCP	NAME PLATE	1	H764WF CPH

4.3.2. NN-P794 APH/CPH, NN-T7*4 APH



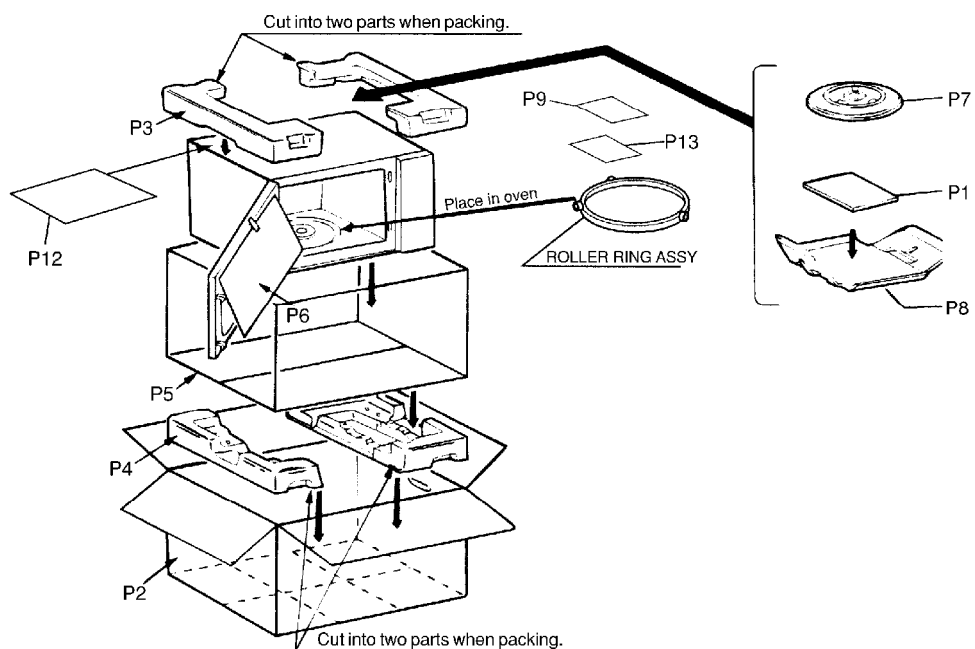
Ref. No.	Part No.	Part Name & Description	Pcs/Set	Remarks
E10	F603L6H60AP	D.P.CIRCUIT (AU)	1	P794SF/BF/WF APH
E10	F603L6H60CP	D.P.CIRCUIT (AU)	1	P794SF/BF/WF CPH
E10	F603L6H70AP	D.P.CIRCUIT (AU)	1	T794SF APH, T784SF APH, T774SF APH
E10	F603L6Q40AP	D.P.CIRCUIT (AU)	1	T764SF APH
E10	F603L6H90AP	D.P.CIRCUIT (AU)	1	T754SF APH
E11	F800L4W70BAP	CONTROL PANEL (AU)	1	T764SF APH, T754SF APH
E12	F630Y6Q40SAP	MEMBRANE SWITCH (U)	1	T764SF APH
E12	F630Y6H90SAP	MEMBRANE SWITCH (U)	1	T754SF APH
E13	F82565X00AP	DOOR OPENING LEVEL	1	P794 APH/CPH, T794SF APH, T784SF APH, T774SF APH
E13	F82564W00AP	DOOR OPENING LEVEL	1	T764SF APH, T754SF APH
E14	F81274W70AP	BACK PANEL	1	T764SF APH, T754SF APH
E15	F00076H60SAP	NAME PLATE	1	P794SF APH
E15	F00076H60BAP	NAME PLATE	1	P794BF APH
E15	F00076H60HAP	NAME PLATE	1	P794WF APH
E15	F00076H60SCP	NAME PLATE	1	P794SF CPH
E15	F00076H60BCP	NAME PLATE	1	P794BF CPH
E15	F00076H60HCP	NAME PLATE	1	P794WF CPH
E15	F00076H70SAP	NAME PLATE	1	T794SF APH
E15	F00076H80SAP	NAME PLATE	1	T784SF APH
E15	F00076Q30SAP	NAME PLATE	1	T774SF APH
E15	F00076Q40SAP	NAME PLATE	1	T764SF APH
E15	F00076H90SAP	NAME PLATE	1	T754SF APH
E16	F66164W20AP	FLAT CABLE	1	P794 APH/CPH, T794SF APH, T784SF APH, T774SF APH
E17	F603Y5W00AP	D.P.CIRCUIT (DU)	1	P794 APH, T794SF APH, T784SF APH, T774SF APH
E17	F603Y5W00CP	D.P.CIRCUIT (DU)	1	P794 CPH
E18	F83376H70SAP	MEMBRANE SHEET	1	T794SF APH
E18	F83376H80SAP	MEMBRANE SHEET	1	T784SF APH
E18	F83376Q30SAP	MEMBRANE SHEET	1	T774SF APH
E19	F800L6H60SAP	CONTROL PANEL (AU)	1	P794SF APH
E19	F800L6H60BAP	CONTROL PANEL (AU)	1	P794BF APH
E19	F800L6H60HAP	CONTROL PANEL (AU)	1	P794WF APH
E19	F800L6H60SCP	CONTROL PANEL (AU)	1	P794SF CPH
E19	F800L6H60BCP	CONTROL PANEL (AU)	1	P794BF CPH
E19	F800L6H60HCP	CONTROL PANEL (AU)	1	P794WF CPH
E19	F800L5X00BAP	CONTROL PANEL (AU)	1	T794SF APH, T784SF APH, T774SF APH
E20	F82986H60SAP	BUTTON	1	P794SF APH/CPH
E20	F82986H60BAP	BUTTON	1	P794BF APH/CPH
E20	F82986H60HAP	BUTTON	1	P794WF APH/CPH
E20	F82985X00AP	BUTTON	1	T794SF APH, T784SF APH, T774SF APH
E21	F90095X00AP	GROUNDING PANEL	1	P794 APH/CPH, T794SF APH, T784SF APH, T774SF APH
E22	F891P6H60SAP	DOOR OPENING BUTTON	1	P794SF APH/CPH
E22	F891P6H60BAP	DOOR OPENING BUTTON	1	P794BF APH/CPH
E22	F891P6H60HAP	DOOR OPENING BUTTON	1	P794WF APH/CPH
E22	F80724W70SAP	DOOR OPENING BUTTON	1	T7*4SF APH
E23	F80375K00AP	COOK BUTTON SPRING	1	P794 APH/CPH, T7*4SF APH

4.4. WIRING MATERIALS



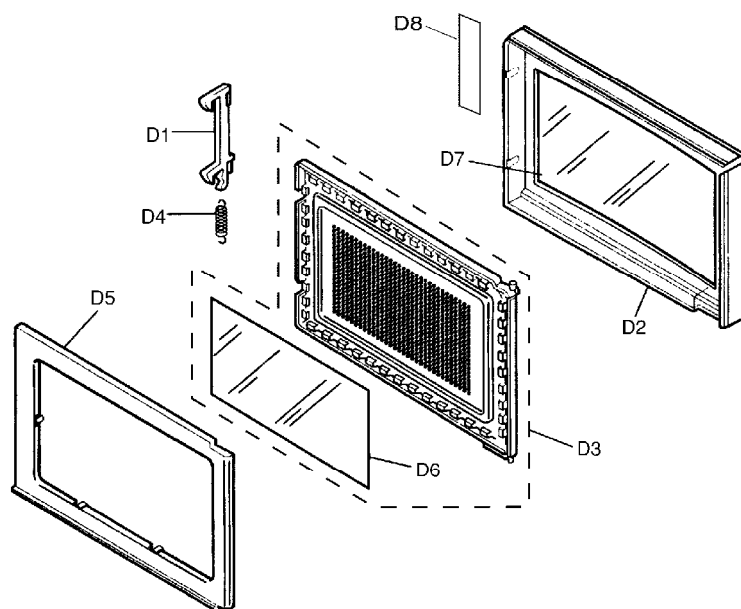
Ref. No.	Part No.	Part Name & Description	Pcs/Set	Remarks
W1	F030A6G30AP	LEAD WIRE HARNESS	1	APH
W1	F030A6G30CP	LEAD WIRE HARNESS	1	CPH
W2	F030E6G30AP	H.V.LEAD WIRE	1	APH
W2	F030E6J00CP	H.V.LEAD WIRE	1	CPH

4.5. PACKING AND ACCESSORIES



Ref. No.	Part No.	Part Name & Description	Pcs/Set	Remarks
P1	F00036J00AP	INSTRUCTION MANUAL	1	P794SF/BF/WF APH, T794SF APH, T784SF APH, / T774SF APH, T764SF APH, H764BF/WF APH
P1	F00036J50AP	INSTRUCTION MANUAL	1	H744BF/WF APH, H724BF/WF APH
P1	F00036J00CP	INSTRUCTION MANUAL	1	P794SF/BF/WF CPH, H764BF/WF CPH
P1	F00036J30AP	INSTRUCTION MANUAL	1	T754SF APH, S754BF/WF APH
P1	F00036J60AP	INSTRUCTION MANUAL	1	S744BF/WF APH, S724BF/WF APH
P2	F01026H60SAP	PACKING CASE, PAPER	1	P794SF APH
P2	F01026H60BAP	PACKING CASE, PAPER	1	P794BF APH
P2	F01026H60HAP	PACKING CASE, PAPER	1	P794WF APH
P2	F01026H60SCP	PACKING CASE, PAPER	1	P794SF CPH
P2	F01026H60BCP	PACKING CASE, PAPER	1	P794BF CPH
P2	F01026H60HCP	PACKING CASE, PAPER	1	P794WF CPH
P2	F01026H70SAP	PACKING CASE, PAPER	1	T794SF APH
P2	F01026H80SAP	PACKING CASE, PAPER	1	T784SF APH
P2	F01026Q30SAP	PACKING CASE, PAPER	1	T774SF APH
P2	F01026Q40SAP	PACKING CASE, PAPER	1	T764SF APH
P2	F01026H90SAP	PACKING CASE, PAPER	1	T754SF APH
P2	F01026J00BAP	PACKING CASE, PAPER	1	H764BF APH
P2	F01026J00HAP	PACKING CASE, PAPER	1	H764WF APH
P2	F01026J50BAP	PACKING CASE, PAPER	1	H744BF APH
P2	F01026J50HAP	PACKING CASE, PAPER	1	H744WF APH
P2	F01026J70BAP	PACKING CASE, PAPER	1	H724BF APH
P2	F01026J70HAP	PACKING CASE, PAPER	1	H724WF APH
P2	F01026J00BCP	PACKING CASE, PAPER	1	H764BF CPH
P2	F01026J00HCP	PACKING CASE, PAPER	1	H764WF CPH
P2	F01026J30BAP	PACKING CASE, PAPER	1	S754BF APH
P2	F01026J30HAP	PACKING CASE, PAPER	1	S754WF APH
P2	F01026J60BAP	PACKING CASE, PAPER	1	S744BF APH
P2	F01026J60HAP	PACKING CASE, PAPER	1	S744WF APH
P3	F01044W00AP	UPPER FILLER	1	P794 APH/CPH, T7*4SF APH
P3	F01045J00AP	UPPER FILLER	1	H7*4 APH/CPH, S7*4 APH
P4	F01054W00AP	LOWER FILLER	1	P794 APH/CPH, T7*4SF APH
P4	F01055J00AP	LOWER FILLER	1	H7*4 APH/CPH, S7*4 APH
P5	F01064W00AP	P.E.BAG	1	
P6	F01074W00AP	DOOR SHEET	1	
P7	F06014W00AP	COOKING TRAY	1	
P8	F01084W00AP	TRAY PACKING	1	
P9	F00065G40AP	CAUTION LABEL	1	APH
P12	F01924T00AP	SHEET	1	P794BF APH/CPH, T774SF APH, H7*4BF APH/CPH, S7*4BF APH
P13	F04456H60SCP	OVERLAY	1	P794SF CPH
P13	F04456H60BCP	OVERLAY	1	P794BF CPH
P13	F04456H60HCP	OVERLAY	1	P794WF CPH
P13	F04456J00BCP	OVERLAY	1	H764BF CPH
P13	F04456J00HCP	OVERLAY	1	H764WF CPH

4.6. DOOR ASSEMBLY

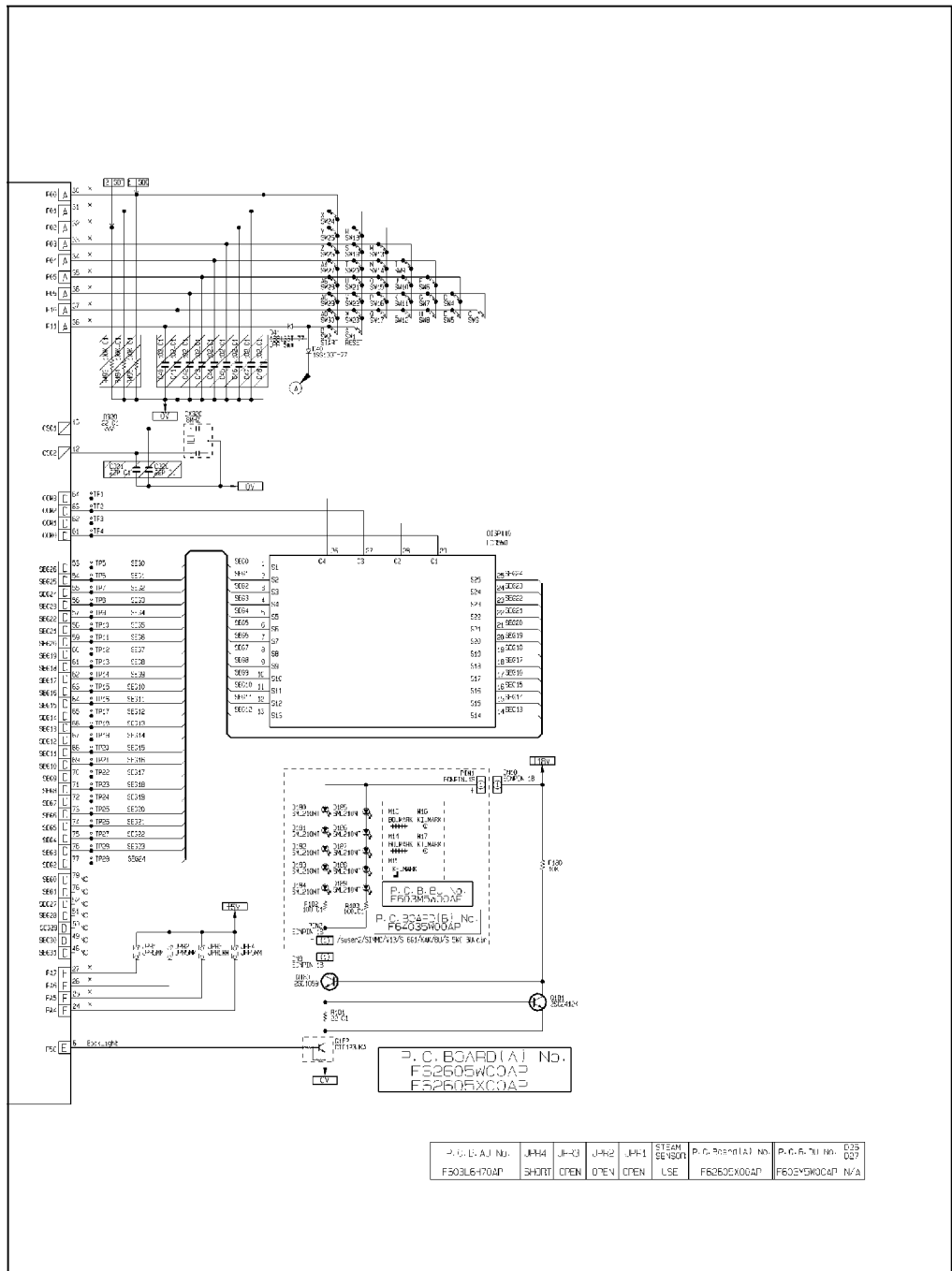


Ref. No.		Part No.	Part Name & Description	Pcs/Set	Remarks
D1		F3018-1200	DOOR KEY A	1	
D2		F302A6H60SAP	DOOR A (U)	1	P794SF APH/CPH
D2		F302A6H60BAP	DOOR A (U)	2	P794BF APH/CPH
D2		F302A6H60HAP	DOOR A (U)	3	P794WF APH/CPH
D2		F302A5X00SAP	DOOR A (U)	1	T7*4SF APH
D2		F30016J00BAP	DOOR A	1	H7*4BF APH/CPH, S7*4BF APH
D3		F30016J00HAP	DOOR A	1	H7*4WF APH/CPH, S7*4WF APH
D3		F302K4W00AP	DOOR E (U)	1	
D4		F30215G10XN	DOOR KEY SPRING	1	
D5		F30854W00AP	DOOR C	1	
D6		F31454W00AP	DOOR SCREEN A	1	
D7		F31466H60SAP	DOOR SCREEN B	1	P794 APH/CPH
D7		F31465X00SAP	DOOR SCREEN B	1	T794SF APH, T774SF APH, T764SF APH, T754SF APH
D7		F31465X70BAP	DOOR SCREEN B	1	T784SF APH
D7		F31466J00BAP	DOOR SCREEN B	1	H7*4BF APH/CPH, S7*4BF APH
D7		F31466J00HAP	DOOR SCREEN B	1	H7*4WF APH/CPH, S7*4WF APH
D8		F02459660AP	DHHS LABEL	1	P794 APH, T7*4SF APH
D8		F04114180CP	DHHS LABEL	1	P794 CPH

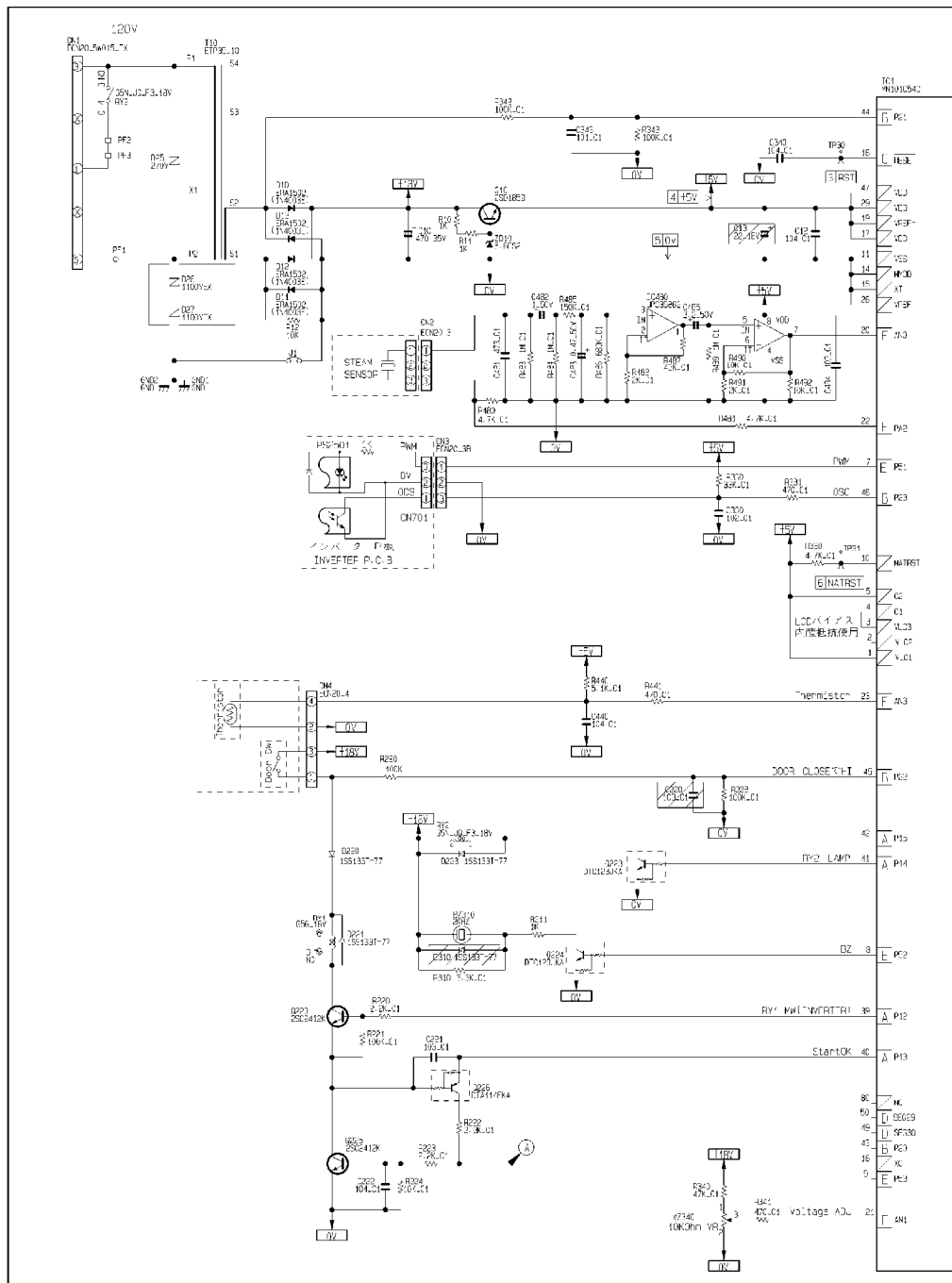
5. DIGITAL PROGRAMMER CIRCUIT

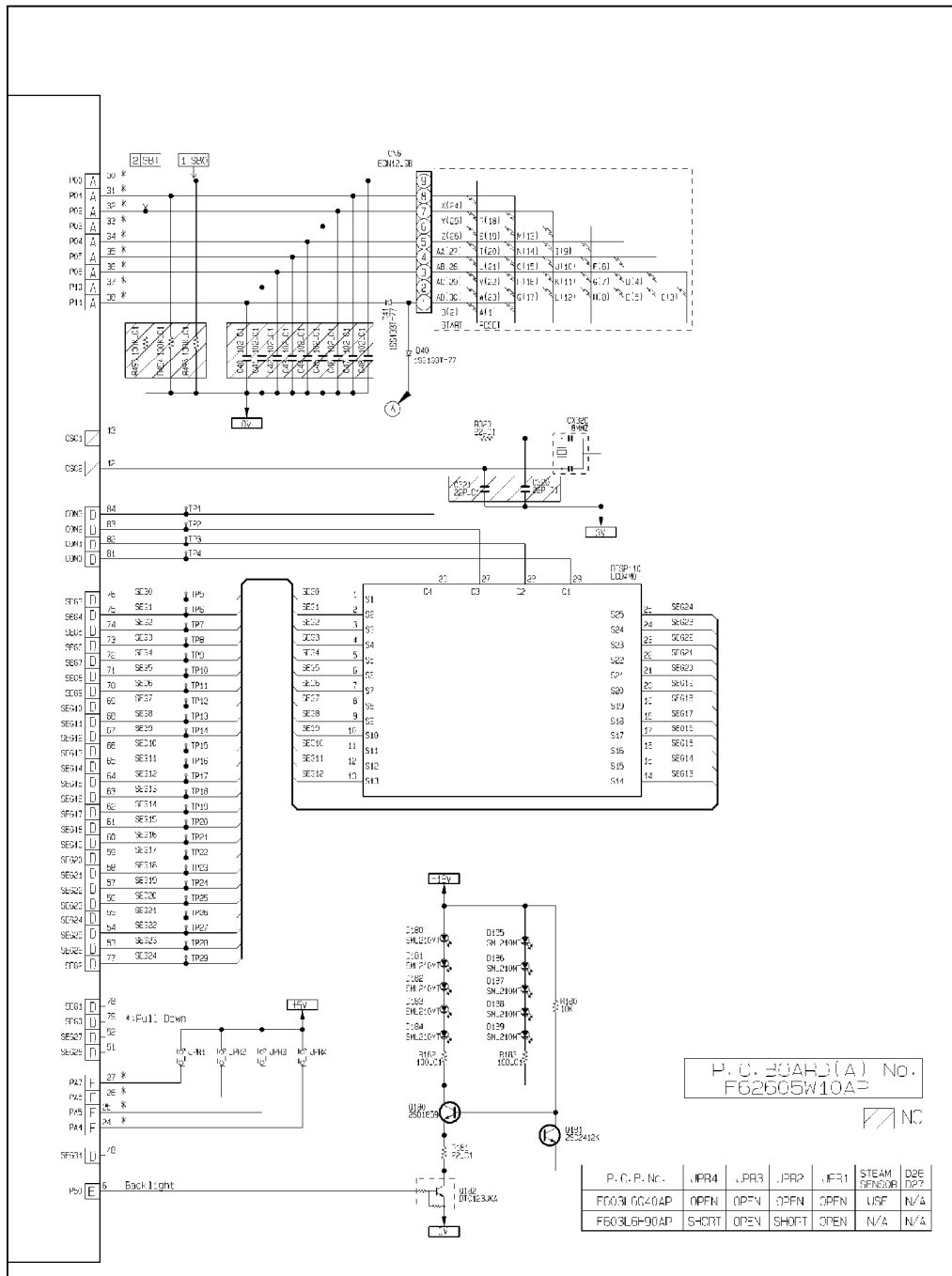
5.1. NN-P794 APH/CPH



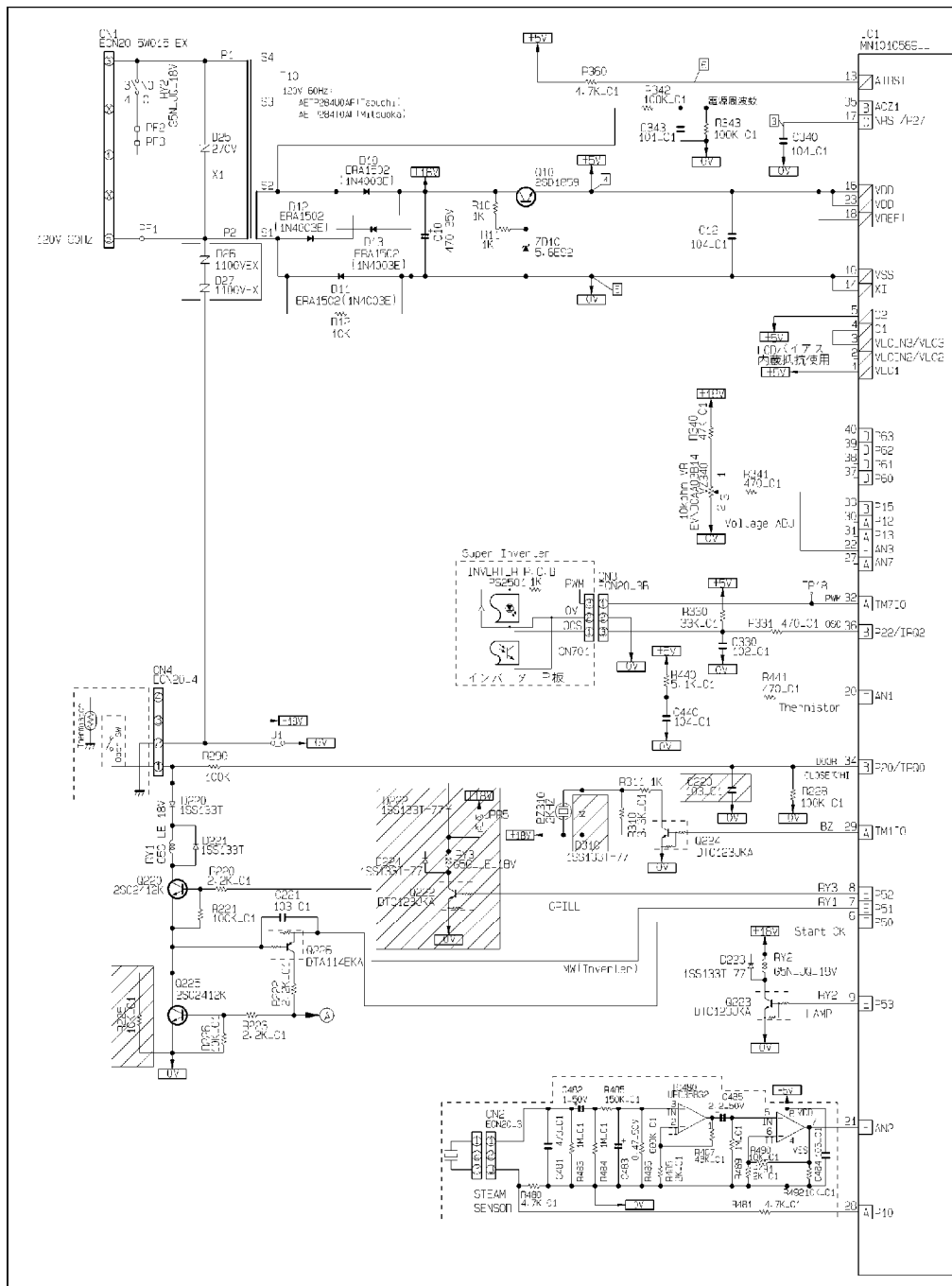


5.3. NN-T764SF APH, NN-T754SF APH





5.4. NN-H764 APH/CPH, S754BF/WF APH



Ref. No.	Part No.	Part Name & Description	Pcs/Set	Remarks
BZ310	AEFBAT2001	BUZZER	1	2.0KHz
C221	AECUU06F103Z	CHIP CAPACITOR	1	0.01 μ F/50V
C222, C486	AECUU06F103Z	CHIP CAPACITOR	2	0.01 μ F/50V / (P794 APH/CPH, T794/T784/T774SF APH)
C484	AECUU06F103Z	CHIP CAPACITOR	1	0.01 μ F/50V (P794 APH/CPH, / T794/T784/T774SF APH, H7*4 APH/CPH)
C343	AECUU06C101J	CHIP CAPACITOR	1	100PF/50V
C12, C340, C440	AECUT06F104Z	CHIP CAPACITOR	3	0.1 μ F/25V
C222	AECUT06F104Z	CHIP CAPACITOR	1	0.1 μ F/25V (T764/T754SF APH)
C330	AECUU06R102K	CHIP CAPACITOR	1	1000PF/50V
C331	AECUU06R102K	CHIP CAPACITOR	1	1000PF/50V / (P794 APH/CPH, T794/T784/T774SF APH)
C223, C224	AECUN06F105Z	CHIP CAPACITOR	2	1 μ F/10V (P794 APH/CPH)
C481	AECUU06F473Z	CHIP CAPACITOR	1	0.047 μ F/50V (P794 APH/CPH, / T794/T784/T774/T764SF APH, H7*4 APH/CPH)
C10	AECETK1V471B	AL CHEM CAPACITOR	1	470 μ F/35V
C482	AECETS1H010B	AL CHEM CAPACITOR	1	1 μ F/50V (P794 APH/CPH, / T794/T784/T774/T764SF APH, H7*4 APH/CPH)
C483	AECETS1HR47B	AL CHEM CAPACITOR	1	0.47 μ F/50V (P794 APH/CPH, / T794/T784/T774/T764SF APH, H7*4 APH/CPH)
C485	AECETS1H2R2B	AL CHEM CAPACITOR	1	2.2 μ F/50V (P794 APH/CPH, / T794/T784/T774/T764SF APH, H7*4 APH/CPH)
C13	AECETS1C220B	AL CHEM CAPACITOR	1	2.2 μ F/50V / (P794 APH/CPH, T794/T784/T774SF APH)
PIN1, PIN2	AEPINIPS-1E7	PIN	2	(P794 APH/CPH, T794/T784/T774SF APH)
CN1	AEEMXH01505W	CONNECTOR	1	5 Pin
CN2	AEEMMF00703W	CONNECTOR	1	3 Pin (P794 APH/CPH, / T794/T784/T774/T764 APH, H7*4 APH/CPH)
CN3	F03524U50AP	CONNECTOR	1	(P794 APH/CPH, T794/T784/T774SF APH)
CN3	F03526P40AG	CONNECTOR	1	(T764/T754SF APH, H7*4 APH/CPH, S7*4 APH)
CN4	AEEMXH00F04W	CONNECTOR	1	
CN5	AEEM9604S15F	CONNECTOR	1	15Pin (P794 APH/CPH, T794/T784/T774SF APH)
CN6	AEEM9604S15C	CONNECTOR	1	(P794 APH/CPH, T794/T784/T774SF APH)
CN6	AEEM09FDZBTM	CONNECTOR	1	9 Pin / (T764/T754SF APH, H7*4 APH/CPH, S7 APH)
CX320	AEFOS800MG06	CERAMIC RESONATOR	1	8.0MHz
DISP1	AEDDHJ5W00AP	LCD	1	(P794 APH/CPH, T794/T784/T774SF APH)
DISP1	AEDDHJ4M00AP	LCD	1	(T764/T754SF APH, H764 APH/CPH, S754 APH)
DISP1	AEDDHJ5U20XN	LCD	1	(H744 APH, H724 APH, S744 APH)
DISP1 HOLDER	F66175W00AP	LCD HOLDER	1	(P794 APH/CPH, T794/T784/T774SF APH)
DISP1 HOLDER	F66175E40XN	LCD HOLDER	1	(T764/T754SF APH, H764 APH/CPH, S754 APH)
DISP1 HOLDER	F66174U20AP	LCD HOLDER	1	(H744 APH, H724 APH, S744 APH)
	F67525E40XN	DIFFUSION SHEET	1	(P794 APH/CPH, T7*4SF APH, H764 APH/CPH, S754 APH)
D10-D13	AESSRCT1A6-E	DIODE	4	
D40, D220, D221, D223	AESS133T-77	DIODE	4	
D26, D27	AESS133T-77	DIODE	2	(P794 APH/CPH)
D225	AESS133T-77	DIODE	1	(P794 APH/CPH, T794/T784/T774SF APH)
D25	AERZ271KD10A	VARSITOR	1	
D26, D27	AERZ102KD10A	VARSITOR	2	CPH
D180-D183	AESQPY1112H	CHIP-LED	4	

Ref. No.	Part No.	Part Name & Description	Pcs/Set	Remarks
D184-D189	AESQPY1112H	CHIP-LED	6	(P794 APH/CPH, T7*4SF APH, H764 APH/CPH, S754 APH)
IC1	MN101C54CFS	L.S.I.	1	(P794 APH/CPH, T7*4SF APH, H764 APH/CPH, S754 APH)
IC1	MN101C589ER	L.S.I.	1	(H744 APH, H724 APH, S744 APH)
IC480	AEICUPC358G2	IC	1	(P794 APH/CPH, T794/T784/T774/T764SF APH *4 APH/CPH)
Q226	AESA14EKE	CHIP DIGI-TRANSISTOR	1	
Q182, Q223, Q224	AESC23JKE	CHIP DIGI-TRANSISTOR	3	
Q10, Q180	2SD1859TV2Q	TRANSISTOR	2	
Q181, Q220, Q225	2SC2412KT146	CHIP TRANSISTOR	3	
Q221	2SA1037AK	CHIP TRANSISTOR	1	(P794 APH/CPH)
R182, R183	AERJ06J101R	CHIP RESISTOR	2	100 Ω , 1/10W, 5% (P794 APH/CPH, / T7*4SF APH, H764 APH/CPH, S754 APH)
R224	AERJ06J103R	CHIP RESISTOR	1	10K, 1/10W, 5% (P794 APH/CPH, T7*4SF APH, H764 APH/CPH, S754 APH)
R226	AERJ06J103R	CHIP RESISTOR	1	10K, 1/10W, 5% / (H744 APH, H724 APH, S744 APH)
R232	AERJ06J103R	CHIP RESISTOR	1	10K, 1/10W, 5% (P794 APH/CPH)
R490, R492	AERJ06J103R	CHIP RESISTOR	2	10K, 1/10W, 5% (P794 APH/CPH, / T794/T784/T774/T764SF APH, H7*4 APH/CPH)
R221, R228, R342, R343	AERJ06J104R	CHIP RESISTOR	4	100K, 1/10W, 5%
R229	AERJ06J104R	CHIP RESISTOR	1	100K, 1/10W, 5% (P794 APH/CPH)
R483, R484, R489	AERJ06J105R	CHIP RESISTOR	3	1M, 1/10W, 5% (P794 APH/CPH, / T794/T784/T774/T764SF APH, H7*4 APH/CPH)
R13	AERJ06J154R	CHIP RESISTOR	1	150K, 1/10W, 5% / (P794 APH/CPH, T794/T784/T774SF APH)
R485	AERJ06J154R	CHIP RESISTOR	1	150K, 1/10W, 5% (P794 APH/CPH, / T794/T784/T774/T764SF APH, H7*4 APH/CPH)
R488, R491	AERJ06J202R	CHIP RESISTOR	2	2K, 1/10W, 5% (P794 APH/CPH, T794/T784/T774/T764SF APH, H7*4 APH/CPH)
R320	AERJ06J220R	CHIP RESISTOR	1	22 Ω , 1/10W, 5%
R181	AERJ06J220R	CHIP RESISTOR	1	22 Ω , 1/10W, 5% (P794 APH/CPH, T7*4SF APH, H764 APH/CPH, S754 APH)
R227	AERJ06J220R	CHIP RESISTOR	1	22 Ω , 1/10W, 5% (H764 APH/CPH, S754 APH)
R220, R222, R223	AERJ06J222R	CHIP RESISTOR	3	2.2K, 1/10W, 5%
R231, R360	AERJ06J222R	CHIP RESISTOR	2	2.2K, 1/10W, 5% (P794 APH/CPH)
R310	AERJ06J332R	CHIP RESISTOR	1	3.3K, 1/10W, 5%
R330	AERJ06J333R	CHIP RESISTOR	1	33K, 1/10W, 5%
R181	AERJ06J360R	CHIP RESISTOR	1	36 Ω , 1/10W, 5% / (H744 APH, H724 APH, S7*4 APH)
R230	AERJ06J363R	CHIP RESISTOR	1	36K, 1/10W, 5% (P794 APH/CPH)
R487	AERJ06J433R	CHIP RESISTOR	1	43K, 1/10W, 5% (P794 APH/CPH, / T794/T784/T774/T764SF APH, H7*4 APH/CPH)
R331, R341, R441	AERJ06J471R	CHIP RESISTOR	3	470 Ω , 1/10W, 5%
R227, R496	AERJ06J471R	CHIP RESISTOR	2	470 Ω , 1/10W, 5% / (P794 APH/CPH, T794/T774SF APH)
R360	AERJ06J472R	CHIP RESISTOR	1	4.7K, 1/10W, 5% / (T7*4SF APH, H7*4 APH/CPH, S7*4 APH)
R480, R481	AERJ06J472R	CHIP RESISTOR	2	4.7K, 1/10W, 5% (P794 APH/CPH, / T794/T784/T774/T764SF APH, H7*4 APH/CPH)
R340	AERJ06J473R	CHIP RESISTOR	1	47K, 1/10W, 5%
R440	AERJ06J512R	CHIP RESISTOR	1	5.1K, 1/10W, 5%
R486	AERJ06J684R	CHIP RESISTOR	1	680K, 1/10W, 5% (P794 APH/CPH, / T794/T784/T774/T764SF APH, H7*4 APH/CPH)

Ref. No.	Part No.	Part Name & Description	Pcs/Set	Remarks
R10, R11, R311	AERDS2TJ102T	CARBON RESISTOR	3	1K, 1/4W, 5%
R12, R180	AERDS2TJ103T	CARBON RESISTOR	2	10K, 1/4W, 5%
R290	AERDS2TJ104T	CARBON RESISTOR	1	100K, 1/4W, 5%
VZ340	AEVNNV6TL103	VARISTOR	1	10K Ω
RY1	AEGG5G1A18	POWER RELAY	1	
RY2	AEBLD118	POWER RELAY	1	
T10	AETP284U0AP	LOW VOLTAGE TRANSFORMER	1	
ZD10	AESZMTZJ5R6B	ZENER DIODE	1	
SW1-SW4, SW6-SW8, SW11-SW30	EVQ11L05R	SWITCH	27	(P794 APH/CPH, T794/T784/T774SF APH)

01/04 / S-6H6, S-6H7 / S-6H8, S-6H9 / S-6J0, S-6J3 / S-6J5, S-6J6 / S-6J7, S-6J8 / S-6Q3, S-6Q4 / Printed in China

Service Manual

Microwave Oven



MODELS	APH	CPH
	USA	Canada
NN-S560BF/WF	○	○
NN-S550BF/WF	○	○
NN-S540BF/WF	○	
NN-L530BF	○	
NN-L530WF	○	○
NN-L520WF		○
NN-S510WF		○

* RPH Model refer to the last page.

Specifications for APH :

Specifications:	Model:	NN-S560BF/WF	NN-S550BF/WF	NN-S540BF/WF	NN-L530BF/WF
Power Source:	*120V AC Single Phase, 60Hz				
Power Requirement:	1370W	1370W	1370W	1370W	
Output(IEC705-88):	1300W	1300W	1100W	1000W	
Microwave Frequency:	*2450MHz				
Timer:	*99min.99sec				
Outside Dimensions:	*20 "(518mm)(W)° × 16 "(407mm)(D)° × 11"(301mm)(H)				
Oven Cavity Dimensions:	*14 "(375mm)(W)° × 15 "(386mm)(D)° × 8 "(225mm)(H)				
Weight:	*26.5 lbs. (12.0kg)				
Output power:IEC705-88 Test Procedure					
Specifications subject to change without notice.					

Specifications for CPH:

Specifications:	Model:	NN-S560BF/WF	NN-S540BF/WF	NN-L530WF	NN-L520WF	NN-S510WF
Power Source:	*120V AC Single Phase, 60Hz					
Power Requirement:	1370W	1370W	1370W	1370W	1370W	
Output(IEC705-88):	1200W	1100W	1100W	1100W	1000W	
Microwave Frequency:	*2450MHz					
Timer:	*99min.99sec					
Outside Dimensions:	*20 "(518mm)(W)° × 16 "(407mm)(D)° × 11"(301mm)(H)					
Oven Cavity Dimensions:	*14 "(375mm)(W)° × 15 "(386mm)(D)° × 8 "(225mm)(H)					
Weight:	*26.5 lbs. (12.0kg)					
Output power:IEC705-88 Test Procedure						
Specifications subject to change without notice.						

Panasonic®

© 2000 Shanghai Matsushita Microwave Oven Co.,Ltd
All rights reserved. Unauthorized copying and distribution is a violation of law.

WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

WARNING

1. This product should be serviced only by trained, qualified personnel.
2. Though this product has been manufactured in compliance with:
"Federal Performance Standard 21 CFR Subchapter J"(D.H.H.S): U.S.A. models
or "Radiation Emitting Devices Act"(Health and Welfare Canada): Canadian models
it is very important all repairs should be made in accordance with procedures described in this manual to avoid being exposed to excessive microwave radiation.
3. Check for radiation leakage before and after every servicing according to the "procedure for measuring radiation leakage."
4. If the unit cannot be repaired on site, advise the customer not to use until unit is repaired.
5. Any serviceman who learns of any accident pertaining to microwave radiation leakage including the oven operating with open door should immediately notify the appropriate address listed below and Center for Devices and Radiological Health, DHHS.

IN U.S.A.
(PASC) Panasonic Services Company
50 Meadowland Parkway,
Secaucus, New Jersey 07094
Attention: Technical Service Division.
(201)348-7000

IN PUERTO RICO
(PSC)

PSC
San Gabriel Industrial Park
65th Infantry Ave. Km.9.5
Carolina, Puerto Rico 00985
(787)750-4300

IN CANADA
(PCI)

Panasonic Canada Inc.
5770 Ambler Drive, Mississauga,
Ontario, L4W2T3
(905)624-5010

6. There are special components used in the microwave oven which are important for safety. These parts are marked with a  on the replacement parts list. It is essential that these critical parts should be replaced only with the manufacture's specified parts to prevent microwave leakage, shock, fire, or other hazards. Do not modify the original design.

PRECAUTIONS TO BE OBSERVED BEFORE AND DURING SERVICING TO AVOID POSSIBLE EXPOSURE TO EXCESSIVE MICROWAVE ENERGY

- (A) Do not operate or allow the oven to be operated with the door open.
- (B) Make the following safety checks on all ovens to be serviced before activating the magnetron or other microwave source, and make repairs as necessary:
 - (1) Interlock operation
 - (2) Proper door closing
 - (3) Seal and sealing surfaces (arcing, wear, and other damage)
 - (4) Damage to or loosening of hinges and latches.
 - (5) Evidence of dropping or abuse
- (C) Before turning on microwave power for any service test or inspection within the microwave generating compartments, check the magnetron, waveguide or transmission line, and cavity for proper alignment, integrity and connections.
- (D) Any defective or misadjusted components in the interlock, monitor, door seal, and microwave generation and transmission systems shall be repaired, replaced, or adjusted by procedures described in this manual before the oven is released to the owner.
- (E) A microwave leakage check to verify compliance with the Federal Performance Standard should be performed on each oven prior to release to the owner.

CONTENTS

	(Page)		(Page)
FEATURE CHART	3	DISASSEMBLY AND PARTS REPLACEMENT PROCEDURE	13
CONTROL PANEL	3	COMPONENT TEST PROCEDURE	16
OPERATION AND DIGITAL PROGRAMMER		MEASUREMENTS AND ADJUSTMENTS	18
CIRCUIT TEST PROCEDURE	5	PROCEDURE FOR MEASURING MICROWAVE ENERGY LEAKAGE...	19
SCHEMATIC DIAGRAMS	7	TROUBLESHOOTING GUIDE	20
DESCRIPTION OF OPERATING SEQUENCE	9	EXPLODED VIEW AND PARTS LIST	24
CAUTIONS TO BE OBSERVED WHEN TROUBLESHOOTING	11	SCHEMATIC DIAGRAM & PARTS LIST OF DIGITAL PROGRAMMER CIRCUIT	25

DANGER OF HIGH VOLTAGE AND HIGH TEMPERATURE (HOT/LIVE) OF THE INVERTER POWER SUPPLY (U)

INVERTER WARNING

This Inverter board looks like a regular PCB. However, this PCB drives the magnetron tube with extremely high voltage and high current.

NEW HV

IT HAS: 1. Very high voltage and high current circuits.

It functions the same as the high voltage transformer and high voltage capacitor in ordinary microwave ovens.

2. Aluminum heat sink is energized with very high voltages and high heat energy.

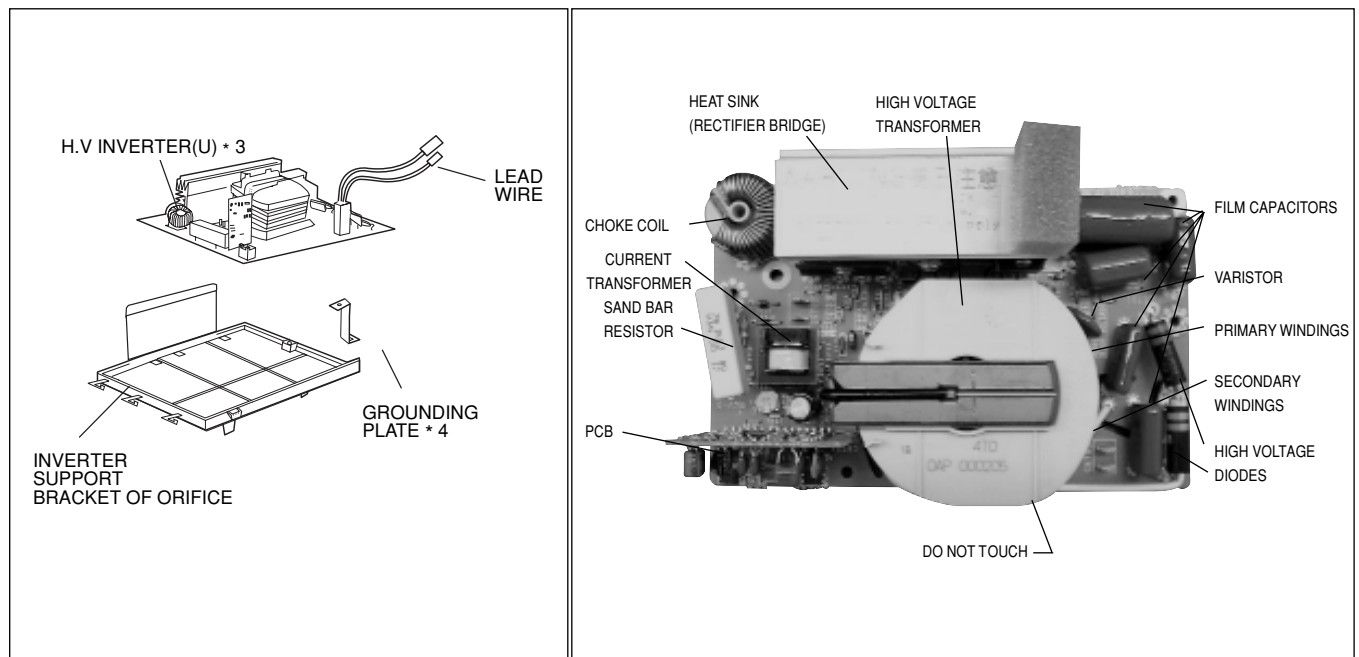
3. Very high voltage may remain in circuitry even when oven is off. High voltage may remain in the capacitors on the board.

DO NOT:

- * 1. Do not touch circuitry because it has very hot (high voltage) circuitry. Even when replacing board, extreme care should be taken to avoid possible electric shock hazards. High voltage may remain in circuit.
- * 2. Do not touch aluminum heat sink because it is very hot in high voltage and also very hot in high heat energy.
- * 3. Do not try to adjust or tamper with preset volume on the Inverter board because it is very dangerous to adjust without proper test equipment.
- * 4. Do not test oven while Inverter grounding plate or screws are loose. It is very dangerous to operate H.V. Inverter Circuit (U) with loose mounting screws or if improperly grounded.
- * 5. For USA only:

Do not try to repair Inverter PCB because it is very dangerous to repair it. Replace as whole High Voltage Inverter Circuit unit and return fully re-packed with original shipping box and shipping materials.

INVERTER POWER SUPPLY DIAGRAM



FEATURE CHART

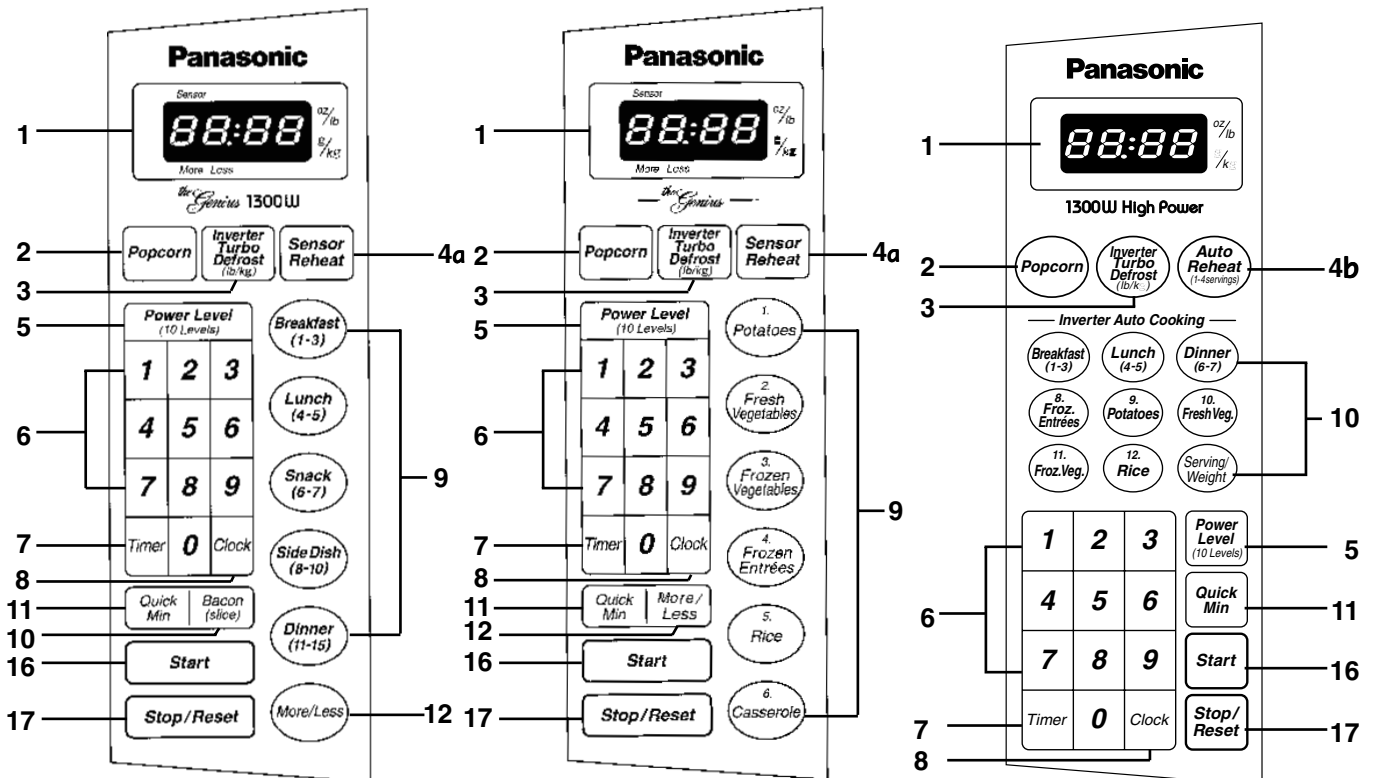
FEATURE	MODEL	NN-S560WF	NN-S550WF NN-S530WF	NN-S540WF NN-S520WF	NN-S510WF
Three Stage Cooking		○		○	
Inverter Turbo Defrost		○		○	
Auto Reheat		—		○	
Inverter Auto Cook		—		○	
Sensor Reheat		○		—	
Sensor Cook		○		—	
Quick Min		○		○	
Popcorn		○		○	
Timer		○		○	
Digital Clock		○		○	

CONTROL PANEL

NN-S560(APH)

NN-S560(CPH)

NN-S550

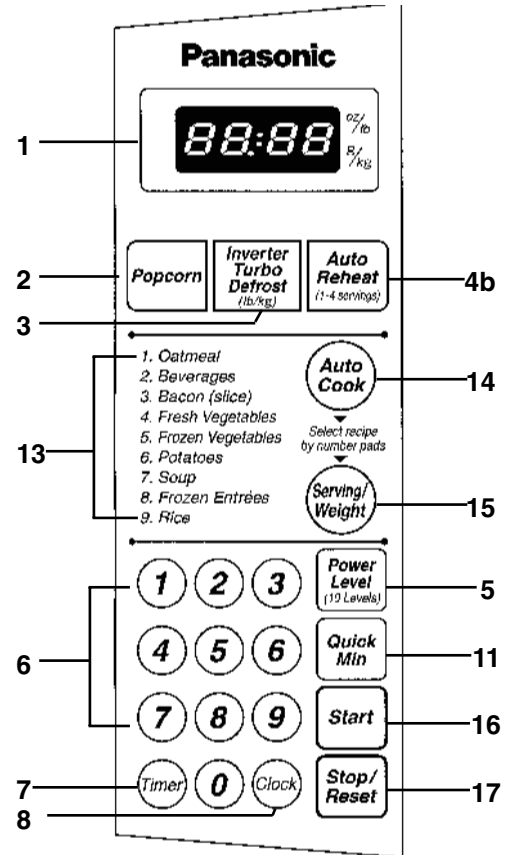
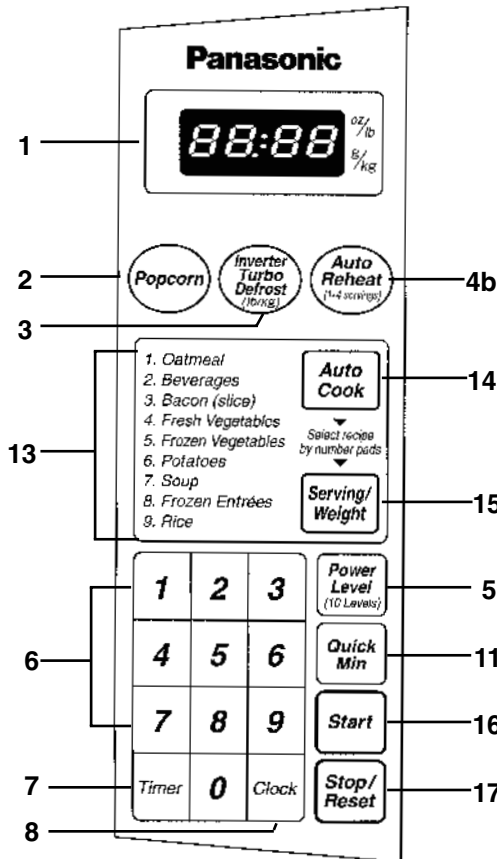
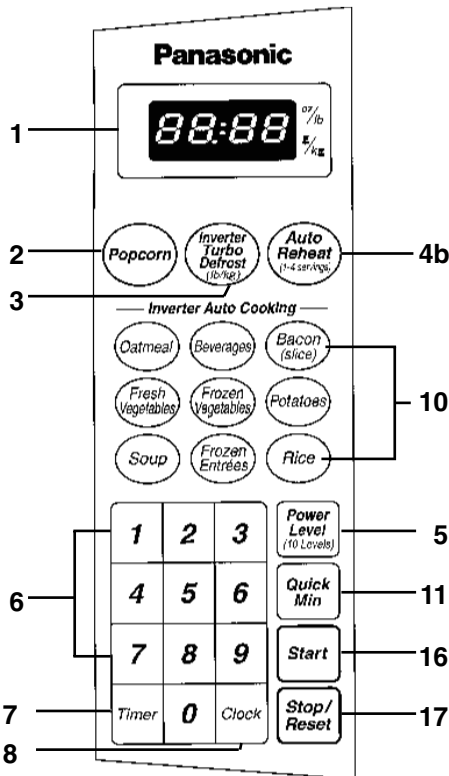


CONTROL PANEL

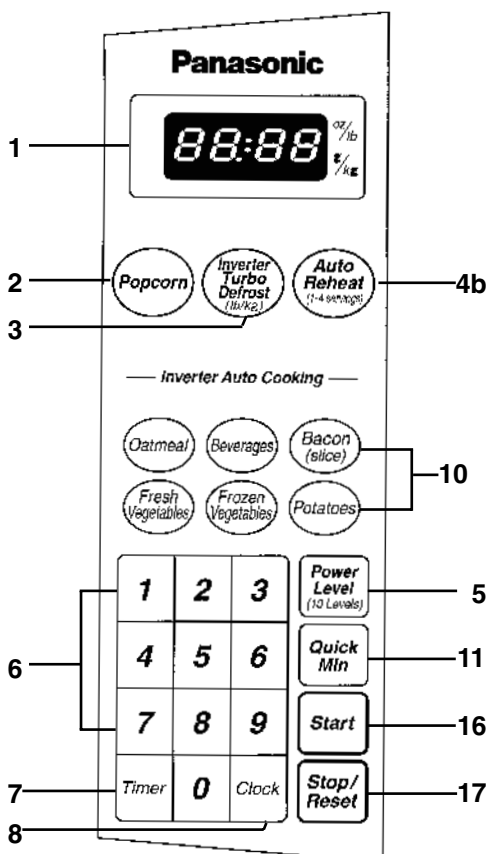
NN-S540

NN-L530

NN-L520



MN-S510



- (1) Display Windows
- (2) Popcorn Pad
- (3) Inverter Turbo Defrost Pad
- (4a) Sensor Reheat Pad
- (4b) Auto Reheat Pad
- (5) Power Level Pad
- (6) Number Pads
- (7) Timer Pad
- (8) Clock Pad
- (9) Sensor Cook Pad
- (10) Inverter Auto Cooking Pads
- (11) Quick Min Pad
- (12) More /Less Pad
- (13) Cooking Guide
- (14) Auto Cook Pad
- (15) Serving/Weight Pad
- (16) Start Pad

One tap allows oven to begin functioning. If door is opened or STOP/RESET Pad is pressed once during oven operation, START Pad must again be pressed to restart oven.

(17) Stop/Reset Pad

Before cooking: One tap clears your instructions. During cooking: One tap temporarily stops the cooking process. Another tap cancels all your instructions and time of day or colon appears on the display window.

OPERATION AND DIGITAL PROGRAMMER CIRCUIT TEST PROCEDURE

When you plug the power supply cord into the wall outlet, microwave oven automatically enter into the state of lb / oz. If you want to use g / kg state, please press **Start** pad after plugging the power source.

1. To Set Clock

OPERATION	SCROLL DISPLAY
1. Plug the power supply cord into wall outlet.	8 8 . 8 8
2. Press Clock pad.	⌘
3. Enter time of day (TOD) by pressing appropriate Number pads.	1 1 ⌘ 2 5
4. Press Clock pad. TOD has now been registered into the digital programmer circuit and will count up by minutes.	1 1 . 2 5

2. Time Cooking for Two Stage

OPERATION	SCROLL DISPLAY
1. Place a water load in the oven.	
2. Press Power Level pad once to set High power. (1st stage)	P 1 0
3. Set for 5 seconds by pressing Number pads. 5 sec.= 5	. 5
4. Press Power Level pad 6 times to set Medium power. (2nd stage)	P 5
5. Set for 1 minute by pressing Number pads. 1 min.= 1 0 0	1.0 0
6. Press Start pad.	. 5
7. When 1st stage cooking time has elapsed. Oven beeps twice and automatically switches to 2nd stage cooking.	1.0 0

OPERATION	SCROLL DISPLAY
8. When 2nd stage cooking time has elapsed, oven beeps 5 times and shuts off.	Time of day or colon if set appears in the display.

3. Inverter Turbo Defrost

OPERATION	SCROLL DISPLAY
1. Press Inverter Turbo Defrost pad.	⌘ —
2. Set the weight for 1 lb by pressing Number pads. 1 lb = 1 0	1.0 —
3. Press Start Pad.	4.23
4. Press Stop/Reset Pad twice. Oven shuts off.	Time of day or colon if set appears in the display.

4. Inverter Auto Cooking

OPERATION	SCROLL DISPLAY
1. Press Rice pad twice.	1
2. Press Start pad. Cooking begins as time counts down.	15.00
3. When cooking time has elapsed, oven beeps 5 times and shuts off.	Time of day or colon if set appears in the display.

5. Auto Cook

OPERATION	SCROLL DISPLAY
1. Press Auto Cook pad.	
2. Press Number pads. (Press 3 to select Bacon)	3

OPERATION	SCROLL DISPLAY
3. Press Serving / Weight pad. (Select 4. 6. 10. 14 slices)	4
4. Press Start pad.	4.10
When cooking time has elapsed, Oven beeps 5 times and shuts off.	Times of day or colon if set appears in the display.

6. Popcorn

OPERATION	SCROLL DISPLAY
1. Press Popcom pad five times for 3.5 oz serving. (Select 1.75. 2.65. 2.85. 3.0 or 3.5 oz)	3.5
2. Press Start pad. Cooking begin as times counts down.	1.45
When cooking time has elapsed, Oven beeps 5 times and shuts off.	Time of day or colon if set appears in the display.

7. Sensor Cooking (NN-S560WFAPH/CPH,S560BFAPH/CPH)

OPERATION	SCROLL DISPLAY
1. Pour 150 ± 15cc (4.5 ± 1/2 ozs) of room temperature water in a beaker, place the beaker in the center of the oven. Press Breakfast pad twice.	- 2
2. Press Start pad.	
3. The steam sensor detects steam about 1.5 to 4 minutes after the start pad is pressed. Sensor cooking (T1) automatically switches to cooking time(T2). "Sensor" disappears with beep sounds and the remainder of cooking time appears in the display window. NOTE: Cooking time will vary depending on the water temperature, the shape of the beaker or the Power source Voltage.	
4. When cooking time has elapsed, Oven beeps 5 times and shuts off.	Time of day or colon if set appears in the display.

8. Auto Reheat

OPERATION	SCROLL DISPLAY
1. Press Auto Reheat pad twice for two servings.	2
2. Press Start pad. Auto Reheat cycle begins time counts down.	2.00
3. When cooking time has elapsed, Oven beeps 5 times and shuts off.	Time of day or colon if set appears in the display.

9. Power Level

Press Power Level	Power Level	Display Window
once	P 10 (HIGH)	P 10
twice	P 9	P 9
3 times	P 8	P 8
4 times	P 7 (MED. HIGH)	P 7
5 times	P 6 (MEDIUM)	P 6
6 times	P 5	P 5
7 times	P 4	P 4
8 times	P 3 (MEDIUM-LOW)	P 3
9 times	P 2	P 2
10 times	P 1 (LOW)	P 1

10. To set Child safety Lock

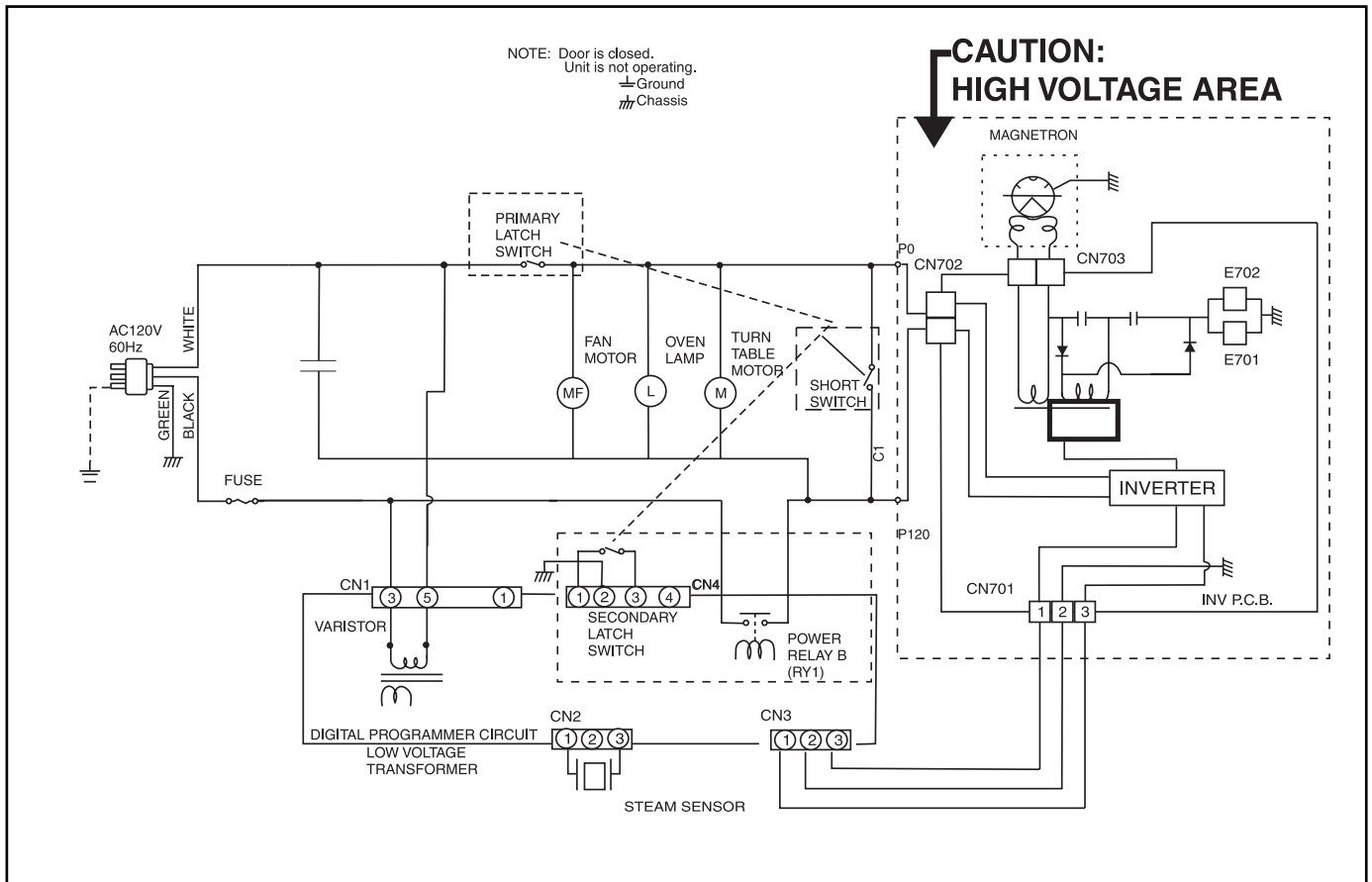
OPERATION	SCROLL DISPLAY
1. Press Start pad 3 times continuously. "Child" appears in the display.	Child

11. To Reset Child Lock

OPERATION	SCROLL DISPLAY
1. Press Start / Reset pad 3 times continuously.	Time of day or colon if set appears in the display.

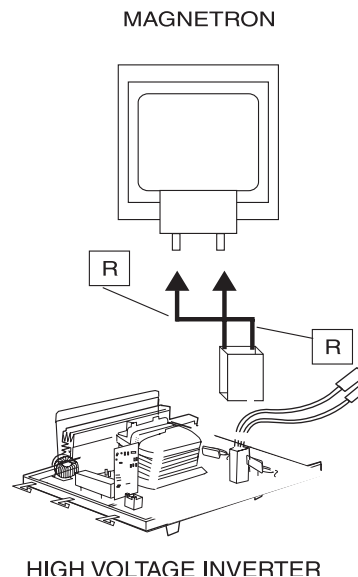
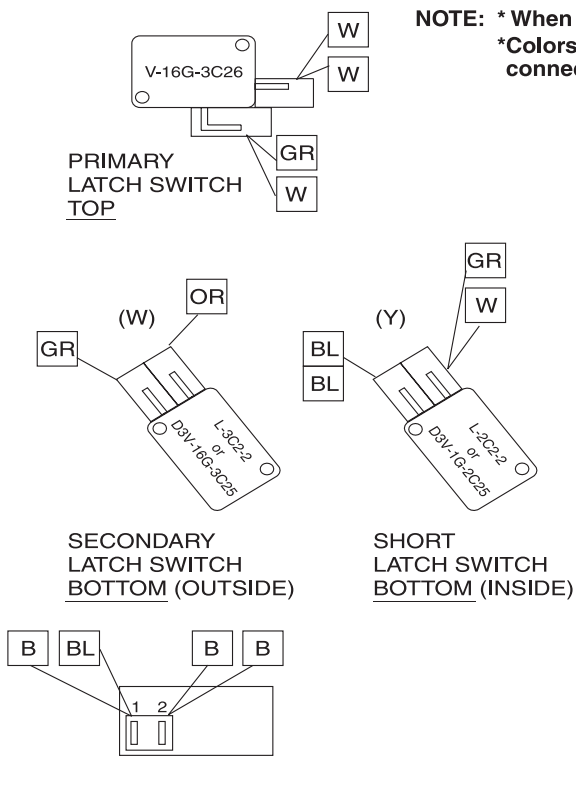
SCHEMATIC DIAGRAM (APH)

SCHEMATIC DIAGRAM (APH)



WIRING DIAGRAM (APH)

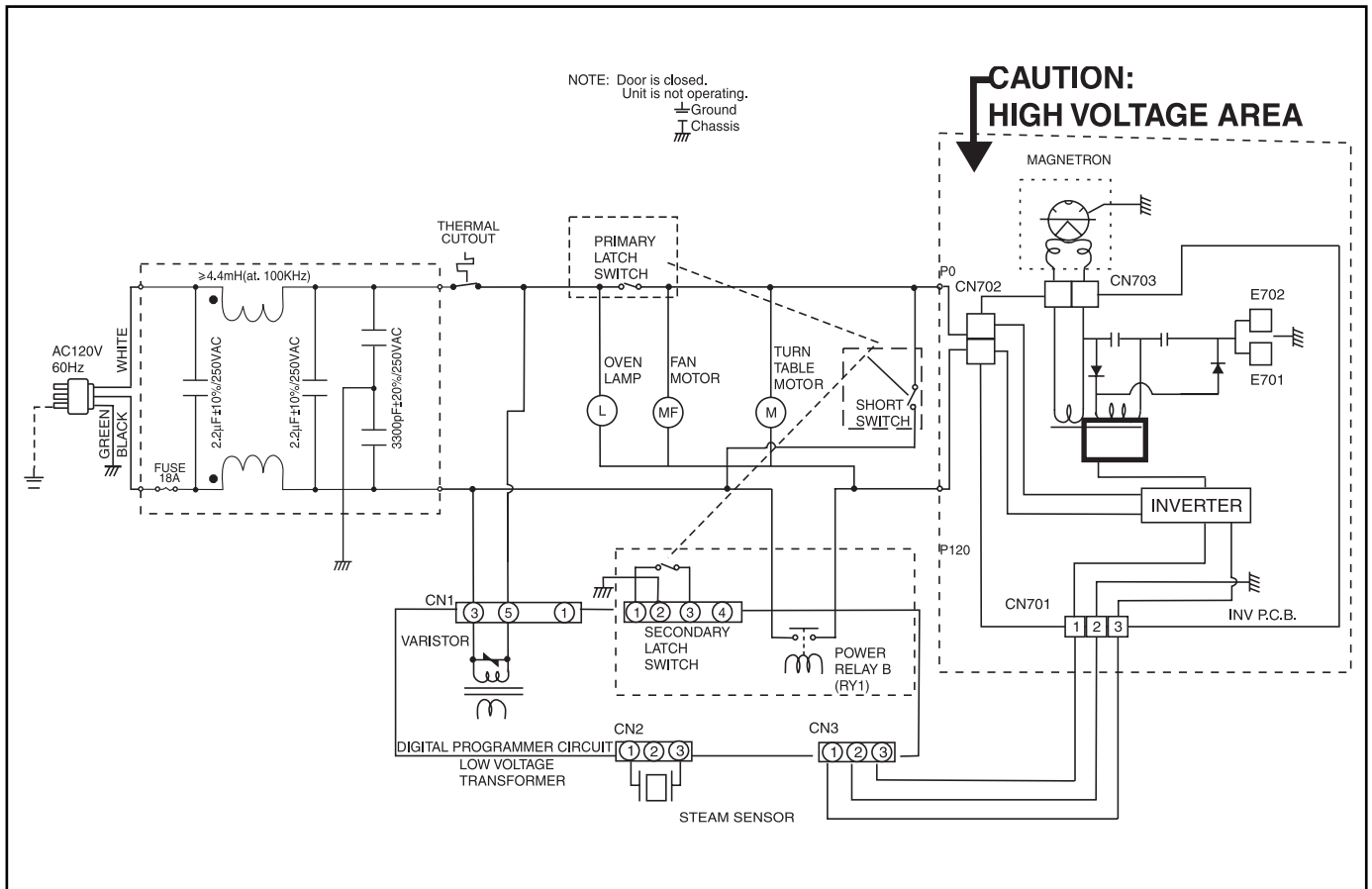
NOTE: * When replacing, check the lead wire color as shown.
* Colors shown by () indicate colors of lead wire connector housing.



SYMBOL	COLOR
OR	ORANGE
BL	BLUE
BR	BROWN
W	WHITE
Y	YELLOW
R	RED
GR	GRAY
B	BLACK

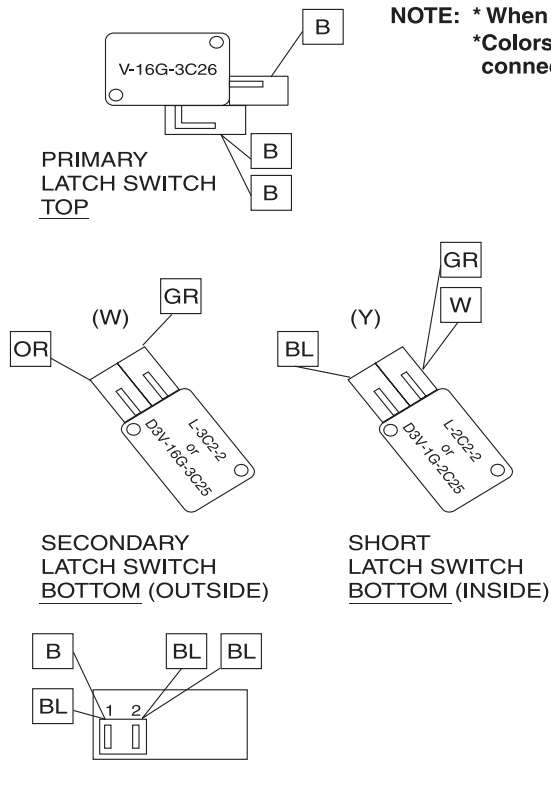
SCHEMATIC DIAGRAM (CPH)

SCHEMATIC DIAGRAM (CPH)



WIRING DIAGRAM (CPH)

NOTE: * When replacing, check the lead wire color as shown.
* Colors shown by () indicate colors of lead wire connector housing.



SYMBOL	COLOR
OR	ORANGE
BL	BLUE
BR	BROWN
W	WHITE
Y	YELLOW
R	RED
GR	GRAY
B	BLACK

DESCRIPTION OF OPERATING SEQUENCE

1. Variable power cooking control

The coil of power relay B (RY1) is energized intermittently by the digital programmer circuit, when the oven is set at any power selection except for High power position. The digital programmer circuit controls the ON-OFF time of power relay B contacts in order to vary the output power of the microwave oven from "Low" to "High" power. One complete ON and OFF cycle of power relay B is 22 seconds. The relation between indications on the control panel and the output of the microwave oven is as shown in table.

NOTE: The ON/OFF time ratio does not correspond with the percentage of microwave power since approximately 2 seconds are required for heating of magnetron filament.

2. Inverter Power Supply Circuit **NEW H,V**

This Inverter Power Supply Circuit supplies 4,000V DC to the magnetron tube from the line voltage, 120v 60Hz AC input. functions as the H.V. transformer, the H.V. capacitor and H.V. Diode.

1. The AC input voltage 120V 60HZ is rectified to DC voltage immediately.
2. DC voltage will be supplied to the switching devices called IGBT. These devices will be switched ON-OFF by the 20 to 40 kHz PWM. (pulse width modulation) signal from the microcomputer in the DPC.
3. This drives the High voltage transformer to increase up to 2,000V AC and approximately 3V AC by means of transformer.
4. Then the half-wave doubler voltage rectifier circuit, consisting of the HV diodes and Capacitors, generates the necessary 4,000V DC needed for the magnetron.
5. Output power of the magnetron tube is always monitored by the signal output from the current transformer built into the inverter circuit.
6. Then this signal will be fed back to the microcomputer in the DPC to determine operating conditions and output necessary to control PWM signal to the inverter Power Supply to control output power.

3. Inverter Turbo Defrost

When this Auto Control feature is selected and the Start Pad is tapped:

- (A) The digital programmer circuit determines the power level and cooking time to complete cooking and indicates the operating state in the display window. Table shows the corresponding cooking times for respective serving by categories.
- (B) When cooking time the display window has elapsed, the oven turns off automatically by a control signal from the digital programmer circuit.

Variable Power Cooking

POWER SETTING	OUTPUT POWER(%) APPROX.	ON-OFF TIME OF POWER RELAY B (RY1)	
		ON (SEC)	OFF (SEC)
HIGH P10	100%	22	0
P9	90%	22	0
P8	80%	22	0
MEDIUM-HIGH P7	70%	22	0
MEDIUM P6	60%	22	0
P5	50%	22	0
P4	40%	22	0
MEDIUM-LOW P3	30%	22	0
P2	20%	15	7
P1	10%	8	14
DEFROST P3	30%	22	0

Inverter Turbo Defrost

SELECTED WEIGHT	COOKING TIME
1.0LB	4 min.28 sec.
6.0LB	25 min.00 sec.

4. Sensor Cooking (NN-S560BFAPH/CPH NN-S560WFAPH/CPH)

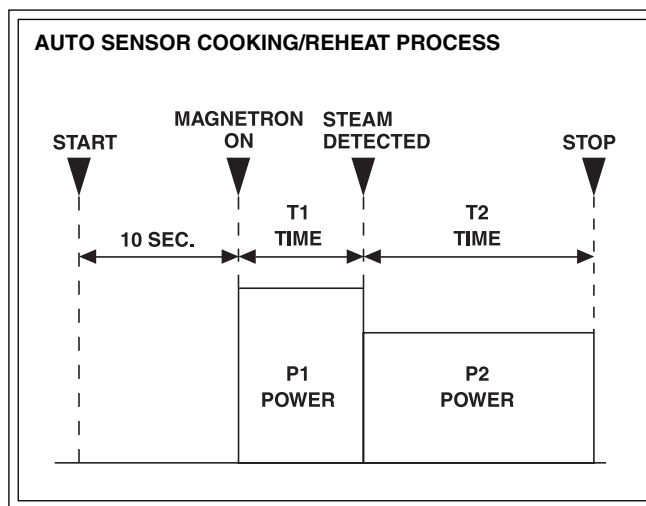
Auto sensor cooking is a revolutionary way to cook by microwave without setting a power level or selecting a time.

All that is necessary is to select an Auto Sensor Program before starting to cook.

Understanding Auto Sensor Cooking

As the food cooks, a certain amount of steam is produced. If the food is covered, this steam builds up and eventually escapes from the container. In Auto Sensor Cooking, a carefully designed instrument, called the steam sensor element, senses this escape of steam. Then, based upon the Auto Sensor Program Selected, the unit will automatically determine the correct power level and the proper length of time it will take to cook the food.

NOTE: Auto Sensor Cooking is successful with the foods and recipes found in the Auto Sensor Cooking Guide. Because of the vast differences in food composition, items not mentioned in the Cooking Guide should be prepared in the microwave oven using power select and time features. Please consult variable Power Microwave cookbook for procedures.



Explanation of the Auto Sensor Cooking process

- 1) During the first 10 second period there is no microwave activity, and when calculating the T2 time by using the formula below make sure this 10 second is subtracted from the T1 time. In other words T1 time starts at the end of the 10 second period.
- 2) T1 time... The total amount of time it takes the microwave oven to switch to T2 time after the 10 second period.
- 3) T2 time... When the steam escapes from the cooking container placed in the oven, the steam sensor detects it and the microprocessor calculates the balance of cooking time. This T2 time is then shown in the display and begins counting down.
Balance of cooking time (T2 time)
The balance of cooking time which is called T2 time, can be calculated by the following formula.

$$T2 \text{ time (in sec.)} = T1 \text{ time} \times K \text{ factor}$$

NOTE: Remember, the T1 time starts after the 10 second period. The coefficient K is programmed Into the microprocessor memory and they are listed in the following tables along with the P1 and P2 powers.

NOTE: When "More" or "Less" pad is selected, the K factor varies resulting In T2 time to be increased or decreased.

Example of calculating the T2 time

Example 1: If the T1 time is measured to be 2 minutes and 40 seconds after the 10 second period, and the Auto program selected is Frozen Vegetable:

$$\begin{aligned}
 T2 &= T1 \times K \\
 &= 2 \text{ min. and } 40 \text{ sec.} \times 0.1 \\
 &= 160 \text{ sec.} \times 0.1 \\
 &= 16 \text{ sec.}
 \end{aligned}$$

5. Sensor Reheat (NN-S560BFAPH/CPH, NN-S560WFAPH/CPH)

Auto Sensor Reheat is a quick and easy way to reheat refrigerator and room temperature foods.

Simply press the reheat pad. There is no need to select power level and cooking time.

NOTE: The Auto Sensor Reheat process is same as Auto Sensor Cooking process.

Sensor Cooking

Category	P1 Power	P2 Power	K Factor Standard
Frozen Vegetables	HIGH	LOW	0.1

Sensor Reheat (All Sensor Models)

Category	P1 Power	P2 Power	K Factor Standard
Sensor Reheat	HIGH	LOW	0.1

CAUTIONS TO BE OBSERVED WHEN TROUBLESHOOTING

Unlike many other appliances, the microwave oven is high-voltage, high current equipment. Though it is free from danger in ordinary use, extreme care should be taken during repair.

CAUTION

Servicemen should remove their watches whenever working close to or replacing the magnetron.

1. Check the grounding

Do not operate on a 2-wire extension cord. The microwave oven is designed to be used when grounded. It is inoperative, therefore, to make sure it is grounded properly before beginning repair work.

2. Inverter Warnings

NEW H.V.

DANGER OF HIGH VOLTAGE AND HIGH TEMPERATURE (HOT/LIVE) OF THE INVERTER POWER SUPPLY (U)

This High Voltage Inverter Power Supply circuit supplies very high voltage and very high current for the magnetron tube. Though it is free from danger in ordinary use, extreme care should be taken during repair. As you can see, it looks like a TV flyback transformer, however the current is extremely large and so danger exists because of its high current and high voltages.

The aluminum heat sink is also energized with high voltage (HOT), so do not touch when AC input terminal is connected to the power line because one of the IGBT switching power devices (Collector) is directly connected to the Aluminum heat sink.

The Aluminum heat sink may be HOT from heat energy; therefore, extreme care should be taken during servicing and replacing.

WARNING OF INVERTER POWER SUPPLY (U) GROUNDING

Check the High Voltage Inverter Power Supply circuit grounding. This High Voltage Inverter Power Supply circuit board must have a proper chassis ground by the grounding bracket to the chassis ground; otherwise, this H.V. Inverter circuit board will expose very high voltage and cause extreme DANGER! Be sure to have proper grounding by the grounding plate and screws.

WARNING OF DISCHARGING HIGH VOLTAGE CAPACITORS

Warning about the electric charge in the high voltage capacitors. For about 30 seconds after the oven is turned off, an electric charge remains in the high voltage capacitors in the inverter power supply circuit board.

When replacing or checking parts, remove the power plug from the outlet and short the Inverter output terminal of the magnetron filament terminals to the chassis ground with an insulated handle screwdriver to discharge. Please make sure to touch chassis ground side first then short to the output terminals.

WARNING

There is high-voltage present, with high-current capabilities in the circuits of the primary, and secondary windings, choke coil and heat sink of the Inverter. It is extremely dangerous to work on or near these circuits with oven energized.

DO NOT measure the voltage in the high voltage circuit including filament voltage of magnetron.

WARNING

Never touch any circuit wiring with your hand nor with an insulated tool during operation.

3. When parts must be replaced, remove the power plug from the outlet.

4. When the 18 Amp fuse is blown due to the operation of short switch:

WARNING

When the 18 Amp. fuse is blown due to the operation of short switch, you must replace Primary latch switch and short switch. Also replace power relay B (RY1) when the continuity check reads shorted contacts (1-2).

(A) This is mandatory. Refer to "Measurements and Adjustments" for these switches.

(B) When replacing the fuse, confirm that it has the appropriate rating for these models.

(C) When replacing faulty switches, be sure mounting tabs are not bent, broken or otherwise deficient in their ability to hold the switches.

5. Avoid inserting nails, wire, etc. through any holes in the unit during operation.

Never insert a wire, nail or any other metal object through the lamp holes on the cavity or any other holes or gaps, because such objects may work as an antenna and cause microwave leakage.



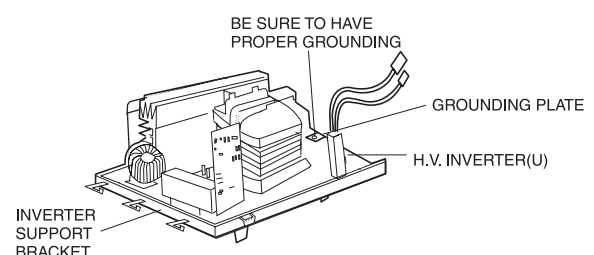
MAGNETRON

INSULATED HANDLE

FILAMENT TERMINAL

SCREWDRIVER

Touch chassis side first then short to the terminal of the magnetron filament terminal.



INVERTER
SUPPORT
BRACKET

GROUNDING PLATE

H.V. INVERTER(U)

6. Confirm after repair

- (A) After repair or replacement of parts, make sure that the screws of the oven, etc. are neither loose nor missing.
Microwaves might leak if screws are not properly tightened.
- (B) Make sure that all electrical connections are tight before inserting the plug into the wall outlet.
- (C) Check for microwave energy leakage. (Refer to procedure for measuring microwave energy leakage.)

CAUTION **MICROWAVE RADIATION**

DO NOT BECOME EXPOSED TO RADIATION FROM THE MICROWAVE GENERATOR OR OTHER PARTS CONDUCTING MICROWAVE ENERGY.

IMPORTANT NOTICE **NEW H.V.**

1. The following components have potentials above 250V while the appliance is operating..
 - * Magnetron
 - * High voltage transformer (Located on Inverter (U))
 - * High voltage diodes (Located on Inverter (U))
 - * High voltage capacitors (Located on Inverter (U))Pay special attention on these portions.
2. When the appliance is operated with the door hinges or magnetron fixed incorrectly, the microwave leakage can reach more than 5mW/cm². After repair or exchange, it is very important to check if magnetron and the door hinges are correctly fixed.

DISASSEMBLY AND PARTS REPLACEMENT PROCEDURE

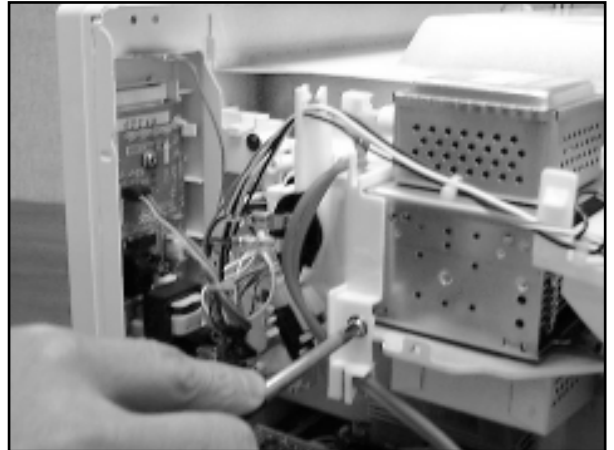
1. Magnetron

- (A) Discharge the high voltage capacitors, as mentioned and shown on page 11.
- (B) Remove 1 screw holding air guide c to magnetron.
- (C) Disconnect 2 high voltage lead wires from magnetron filament terminals.
- (D) Remove 4 screws holding the magnetron.

NOTE: After replacement of the magnetron, tighten mounting screws in an X pattern, properly making sure there is no gap between the waveguide and the magnetron to prevent microwave leakage.

CAUTION

When replacing the magnetron, be sure the antenna gasket is in place.



2. Digital Programmer Circuit (DPC) and membrane key board.

NOTE: Be sure to ground any static electric charge built up on your body before handling the DPC.

- (A) Disconnect all connectors from D.P.C.
- (B) Slide the escutcheon base upward slightly.
- (C) Remove 1 screws holding DPC

To replace membrane key board

- (F) Push the upper part of key board (display window portion) from back of escutcheon base and peel off escutcheon sheet and membrane key board completely from escutcheon base.

NOTE: 1. The membrane key board is attached to the escutcheon base with double faced adhesive tape. Therefore, applying hot air such as using a hair dryer is recommended for smoother removal.

2. When installing new membrane key board, make sure that the surface of escutcheon base is cleaned sufficiently so that any problems (shorted contacts or uneven surface) can be avoided.

3. Alignment position of membrane key board is as follows;

Membrane key board: Right and upper edges

Escutcheon sheet: Right and upper edges

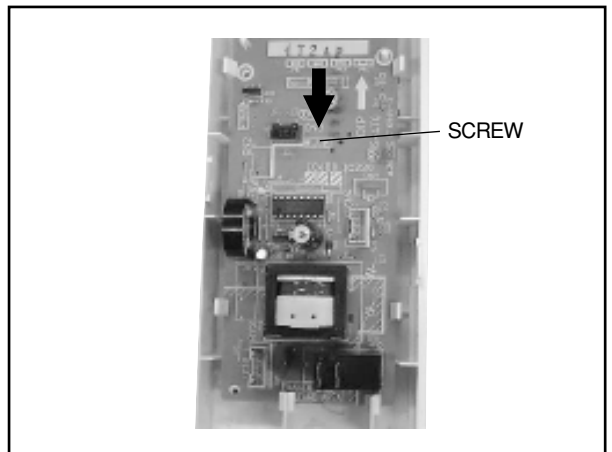
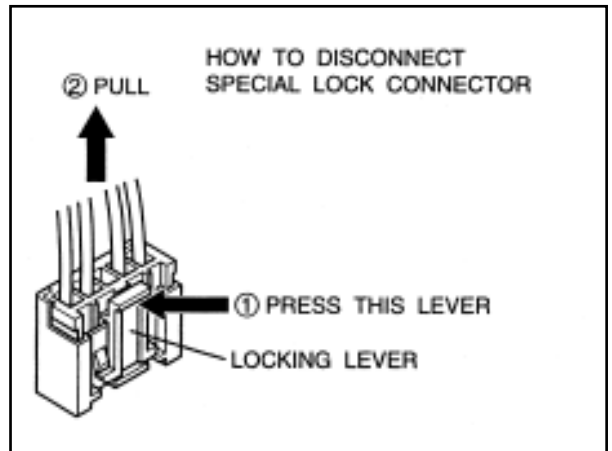
3. Low voltage transformer and/or power relays (RY1, RY2)

NOTE: Be sure to ground any static electric charge built up on your body before handling the DPC.

- (A) Using solder wick or a desoldering tool and 30W soldering iron, carefully remove all solder from the terminal pins of the low voltage transformer and/or power relays.

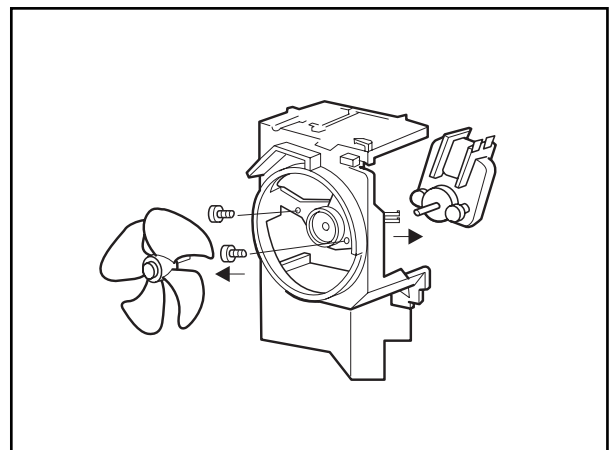
NOTE: Do not use a soldering iron or desoldering tool of more than 30 watts on DPC contacts.

- (B) With all the terminal pins cleaned and separated from DPC contacts, remove the defective transformer/power relays and install new transformer/relays making sure all terminal pins are inserted completely. Resolder all terminal contacts carefully.



4. Fan motor

- (A) Disconnect 2 lead wires from fan motor terminals.
- (B) Remove 1 screw at located on oven attaching orifice assembly.
- (C) Remove orifice assembly/Inverter power supply (U) from oven assembly. (Refer page 15)
- (D) Remove fan blade from the fan motor shaft by pulling it straight out.
- (E) Remove 2 screws holding fan motor to orifice.
- (F) Separate the fan motor from the orifice assembly by freeing 2 catch hooks on the orifice assembly.



5. Door assembly

- Remove door C from door E by carefully pulling outward starting from upper right hand corner using a flat blade screwdriver.
- Separate door E from tabs on door A and remove door A.
- Open Door E at the opening angle of approximately 10° (Note: The door cannot be removed if the opening angle is greater than 10°).
- Remove the door from its hinges by pushing the door's lower hinge pin upward and out.
- Remove door screen B from door A.
- Remove door key and door key spring.
- When reassembling door hold door E at the opening angle of approximately 10°.
- Place the door's lower hinge pin into the bottom hinge hole.
- Use your left index finger to support the door's lower hinge pin while guiding the door's upper hinge pin into the top hinge hole.
- Lower your finger to seat the door onto the hinges.
- Replace other components.
- Door alignment is crucial. If door is misaligned, apply pressure until alignment is achieved.**

After replacement of the defective component parts of the door, reassemble, install, and perform microwave leakage test.

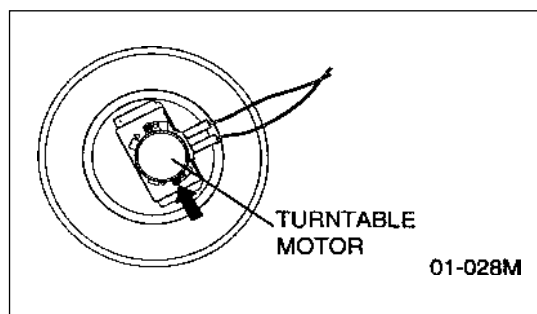
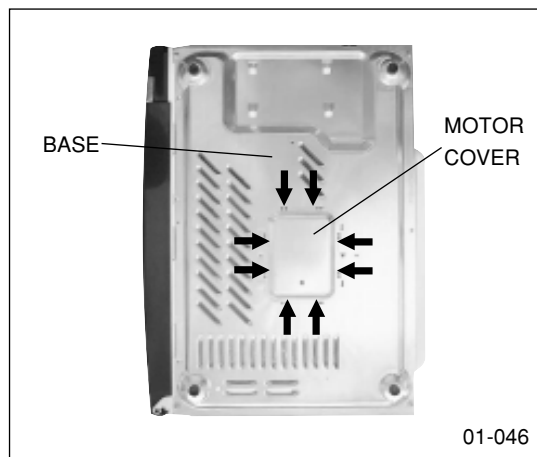
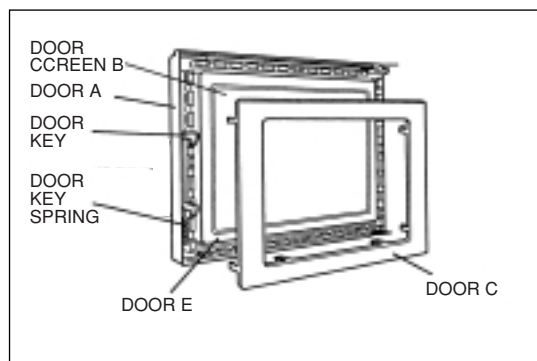
6. Turntable motor

- Remove the motor cover by breaking off at the 8 spots indicated by arrows with a cutter or the like. (See Figure)

NOTE: After breaking off the motor cover, make sure that cut-off portions are properly trimmed off or bend to inside so that no sharp edge will expose to outside.

- Disconnect 2 lead wires connected to the turntable motor.
- Remove the turntable motor by removing 1 screw.

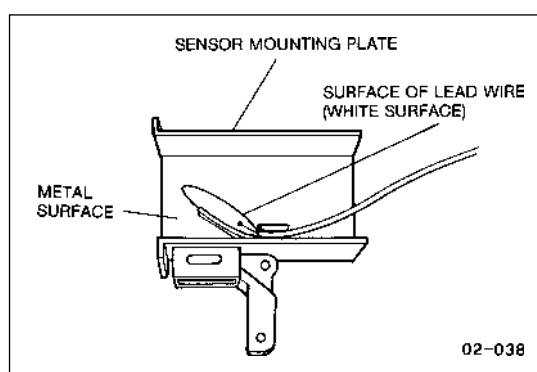
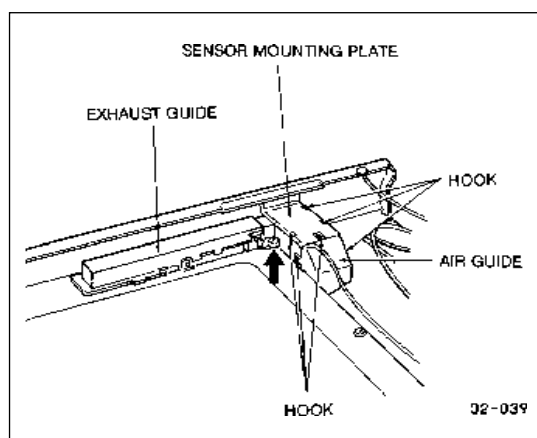
NOTE: After reinstalling the new turntable motor and reconnecting the two lead wires, reinstall the motor cover by rotating it around 180°, tucking the tabs under the base into the 2 provided slots, then screw the single tab to the base using a 4mm X 6mm screw (not provided).



7. Steam Sensor

- Remove 1 screw holding steam sensor unit. (indicated by arrows)
- Disconnect CN2 connector from digital programmer circuit board.
- Remove exhaust guide from steam sensor unit.
- Remove catch hooks on sensor mounting plate and air guide.
- Remove steam sensor from sensor mounting plate.

NOTE: When installing the steam sensor, make sure that the direction of steam sensor is as shown in figure.



8. Inverter Power Supply (U)

CAUTIONS WHILE REPLACING INVERTER POWER SUPPLY (U)

1. Make sure to leave the grounding plate in its place.
2. Make sure to securely tighten grounding screw from the bottom of chasis (base).
3. Securely connect 3 lead wire connectors.
4. Make sure the heat sink has enough space (gap) from the oven. Take special care not to touch any lead wire to the aluminum heat sink because it is hot.



1. Take off outer panel.



2. Remove screw

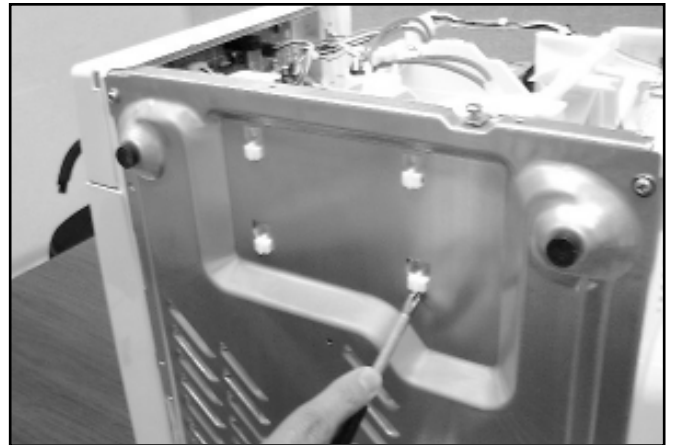


3. Remove screw

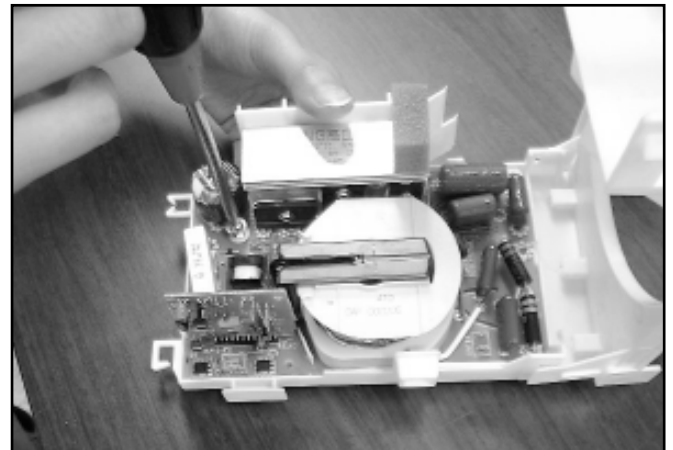
4. Disconnect all wires from inverter. Detach turntable wires from inverter bracket.



5. Remove screw and slide orifice toward you, then lift up and out.



6. Slide four locking of orifice at the bottom of the base slightly



7. Remove 2 screws holding inverter to inverter bracket.

8. Replace inverter and reassemble to inverter bracket A.

9. Retighten 2 screw

10. Slide and place assembly to the correct location of a completed unit.

11. Push Inverter Assembly until locking tabs are locked.

12. Retighten inverter screws and orifice screws.

13. Reconnect all wires to correct location and redress turntable wires.

COMPONENT TEST PROCEDURE

CAUTION [NEW: H.V.]

1. High voltage is present at the high voltage terminal of the High Voltage Inverter (U) including aluminum heat sink during any cook cycle.
2. It is neither necessary nor advisable to attempt measurement of the high voltage.
3. Before touching any oven components, or wiring, always unplug the oven from its power source and discharge the high voltage capacitors.

1. Primary Latch Switch, Secondary (Secondary Latch Switch and Power Relay B) Interlocks.

- (A) Unplug the lead connectors to Power Relay B and verify continuity of the power relay B 1-2 terminals.
- (B) Unplug lead connectors to Primary Latch Switch and Secondary Latch Switch.
- (C) Test the continuity of switches at door opened and closed positions with ohm meter (low scale).

Normal continuity readings should be as follows.

	Door Closed	Door Opened
Primary Latch Switch	0 Ω (close)	$\infty \Omega$ (open)
Secondary Latch Switch	0 Ω (close)	$\infty \Omega$ (open)
Power Relay B	$\infty \Omega$ (open)	$\infty \Omega$ (open)

2. Short Switch & Monitor

- (A) Unplug lead wires from Inverter Power Supply (U) primary terminals.
- (B) Connect test probes of ohm meter to the disconnected leads which were connected to Inverter Power Supply (U).
- (C) Test the continuity of short switch with door opened and closed positions using lowest scale of the ohm meter.

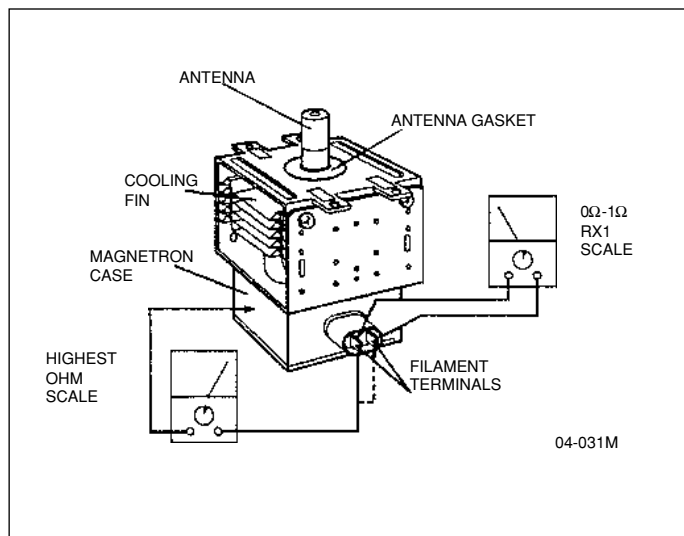
Normal continuity readings should be as follows.

Door Opened	Door Closed
0 Ω	$\infty \Omega$

3. Magnetron

Continuity checks can only indicate an open filament or a shorted magnetron. To diagnose for an open filament or shorted magnetron.

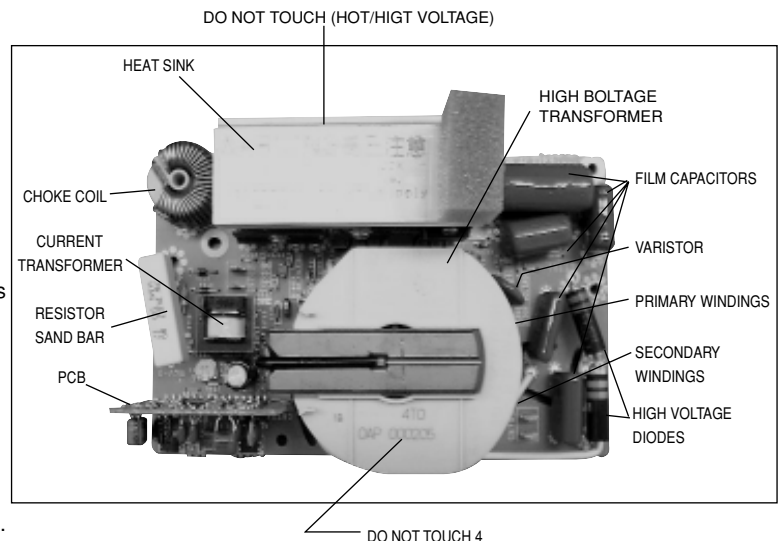
- (A) Isolate magnetron from the circuit by disconnecting the leads.
- (B) A continuity check across magnetron filament terminals should indicate one ohm or less.
- (C) A continuity check between each filament terminal and magnetron case should read open.



4. Membrane key board (Membrane switch assembly)

Check continuity between switch terminals, by tapping an appropriate pad on the key board. The contacts assignment of the respective pads on the key board is as shown in digital programmer circuit.

5. Inverter Power Supply (U) for USA only DO NOT try to REPAIR this H.V. Inverter power supply (U). Replace as whole H.V. Inverter(U) Unit.



DANGER HIGH VOLTAGE

Test if failure codes of H97 or H98 appears by doing the following procedure. It is recommended to use an AC line input current Ampere meter for testing.

Test 1

- A. Program DPC.
 1. Tap Clock
 2. Tap TIMER
 3. Tap START
 4. Tap POWER LEVEL
- B. Place 1 liter of water load into oven cavity.
- C. Unplug 2 pin H.V. lead wire connector CN703 from magnetron tube.
- D. Program oven at High power for 1 minute and press start.
 1. After approximately 15 seconds, oven displays H98 and stops oven.
 2. During oven operation, input current is approximately 1.0 to 1.7A. If both 1 and 2 are OK, please proceed to test 2.

	INPUT AMPERE	FAILURE CODE
Unplug CN703	1.0 to 1.7A	H98

Test 2.

Continued from Test 1

- A. Unplug 3 pin connector, CN701
- B. Set oven at High power for 1 minute and start.
 1. After approximately 27 seconds, oven displays H97 and stops oven.
 2. During oven operation, input current is approximately 0.4 to 0.8A

	INPUT AMPERE	FAILURE CODE
Unplug CN701	0.4 to 0.8A	H97

If both 1 and 2 are OK, the Inverter Power Supply (U) can be determined OK.

6. Steam Sensor and Digital Programmer Circuit

In order to determine if the steam sensor function of the digital programmer circuit is in working order or not, do the following test.

- 1) Place a water load (150 cc) in the oven.
- 2) Tap Sensor Reheat pad.
- 3) Tap Start Pad.
- 4) Steam Sensor detects steam about 1.5 to 4 minutes after the Start Pad is tapped.
- 5) T1 time cooking automatically switches to remaining time cooking (T2).
- 6) The remaining cooking time (T2) appears in display window. If the following cooking time appears, Steam Sensor function is normal.

T1 TIME	T2 TIME (Remaining cooking time)
1 Min. 30 Sec.~4 Min.	8 Sec.~23 Sec.

MEASUREMENTS AND ADJUSTMENTS

WARNING

- * For continued protection against radiation hazard, replace only with identical replacement parts (For touch models Part No. ANE6142-1450, Type No. V-16G-3C26-M for Primary latch switch; Part No. A61425180AP, Type No. L-3C2-2 for Secondary latch switch; Part No. A61785180AP, Type No. L-2C2-2 for short switch and Part. No. AEG5J1EG12B/AEG5J1EG18B, Type No. G5J-1-TP for power relay B(RY1))
- * When the 18 Amp. fuse is blown due to the operation of the short switch, you must replace power relay B. Primary latch switch and the short switch. Then follow the installation procedures below.
- * Interlock switch replacement—In replacing faulty switches, be sure mounting tabs are not bent, broken or otherwise deficient in their ability to hold the switches.
- * Refer to schematic diagram to ensure proper connection.

1. Adjustment of Primary latch switch, Secondary latch switch and Short switch.

- (A) When mounting Primary latch switch, Secondary latch switch and short switch to door hook assembly, mount the Primary latch switch, the Secondary latch switch and the short switch to the door hook assembly as shown in table.

NOTE: No specific adjustment during installation of Primary latch switch, Secondary latch switch and short switch to the door hook is necessary.

- (B) When mounting the door hook assembly to the oven assembly, adjust the door hook assembly by moving it in the direction of arrow in the illustration so that the oven door will not have any play in it. Check for play in the door by pulling the door assembly. Make sure that the latch keys move smoothly after adjustment is completed. Completely tighten the screws holding the door hook assembly to the oven assembly.
- (C) Reconnect the short switch and check the continuity of the monitor circuit and all latch switches again by following the components test procedures.

2. Measurement of microwave output

The output power of the magnetron can be determined by performing IEC standard test procedures. However, due to the complexity of IEC test procedures, it is recommended to test the magnetron using the simple method outlined below.

Necessary Equipment:

*1 liter beaker *Glass thermometer

*Wrist watch or stopwatch

NOTE: Check the line voltage under load. Low voltage will lower the magnetron output. Take the temperature readings and heating time as accurately as possible.

- (A) Fill the beaker with exactly one liter of tap water. Stir the water using the thermometer and record the beaker's temperature. (recorded as T1).
- (B) Place the beaker on the center of glass cook plate. Set the oven for High power and heat it for exactly one minute.
- (C) Stir the water again and read the temperature of the beaker. (recorded as T2).
- (D) The normal temperature rise at High power position for each model is as shown in table.

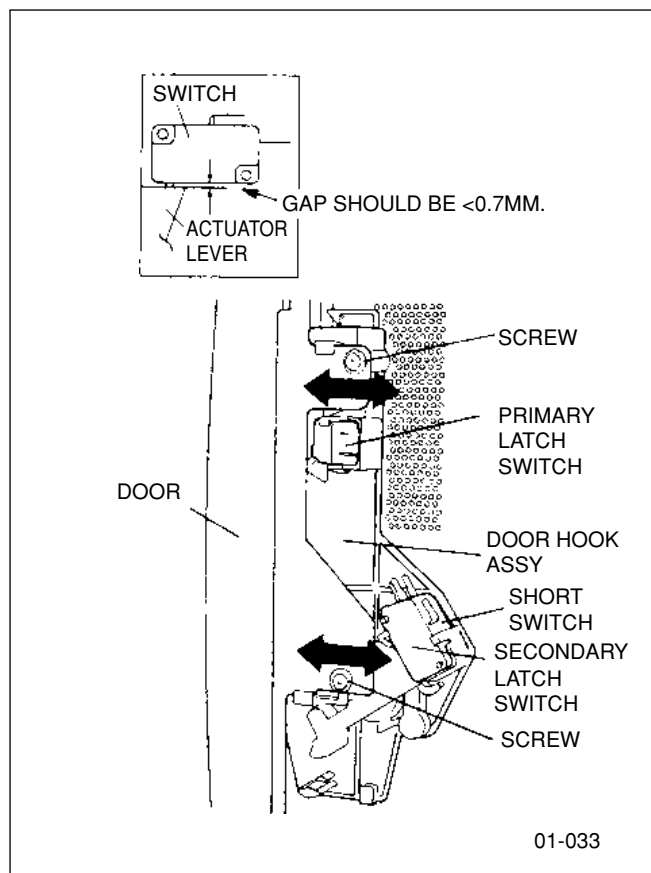


TABLE (1L-1min. test)

RATED OUTPUT	TEMPERATURE RISE
1000~1100W(IEC705-88)	Min. 16.2°F(9°C)
1200~1300W(IEC705-88)	Min. 17.6°F(9.5°C)

PROCEDURE FOR MEASURING MICROWAVE ENERGY LEAKAGE

WARNING

Check for radiation leakage after every servicing. Should the leakage be more than 2 mW/cm² (1mW/cm² for Canada) inform PASC, PSC, or PCI immediately. After repairing or replacing any radiation safety device, keep a written record for future reference, as required by D.H.H.S. and Health and Welfare Canada regulation. This requirement must be strictly observed. In addition, the leakage reading must be recorded on the service repair ticket while in the customer's home.

NOTE: The U.S. Government standard is 5 mW/cm² while in the customer's home. 2mW/cm² stated here is our own voluntary standard. (1mW/cm² for Canada)

1. Equipment

- *Electromagnetic radiation monitor
- *Glass thermometer 212 °F or 100 °C
- *600cc glass beaker

2. Procedure for measuring radiation leakage

Note before measuring.

- (1) Do not exceed meter full scale deflection. Leakage monitor should initially be set to the highest scale.
 - (2) To prevent false readings the test probe should be held by the grip portion of the handle only and moved along the shaded area in Figure no faster than 1 inch/sec (2.5cm/sec).
 - (3) Leakage with the outer panel removed less than 5mW/cm².
 - (4) Leakage for a fully assembled oven with door normally closed less than 2mW/cm² (1mW/cm² for Canada).
 - (5) Leakage for a fully assembled oven [Before the latch switch (primary) is interrupted] while pulling the door less than 2mW/cm².
- (A) Pour 275 ± 15cc (9ozs ± 1/2oz) of 20° ± 5 °C (68° ± 9 °F) water in a beaker which is graduated to 600cc, and place in the center of the oven.
 - (B) Set the radiation monitor to 2450MHz and use it following the manufacturer's recommended test procedure to assure correct results.
 - (C) When measuring the leakage, always use the 2 inch (5cm) spacer supplied with the probe.
 - (D) Tap the start pad or set the timer and with the magnetron oscillating, measure the leakage by holding the probe perpendicular to the surface being measured.
- (1) Measurement with the outer panel removed.**
Whenever you replace the magnetron, measure for radiation leakage before the outer panel is installed and after all necessary components are replaced or adjusted. Special care should be taken in measuring around the magnetron.

WARNING

Avoid contacting any high voltage parts.

(2) Measurements with a fully assembled oven.

After all components, including outer panel are fully assembled, measure for radiation leakage around the door periphery, the door viewing window, the exhaust opening and air inlet openings.

3. Record keeping and notification after measurement

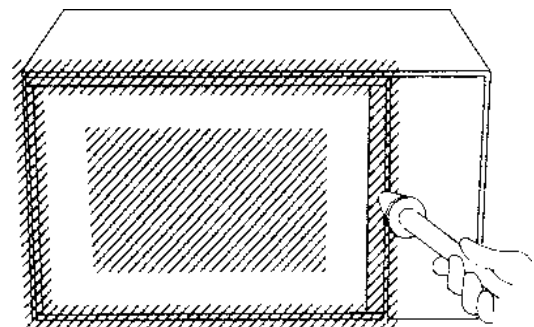
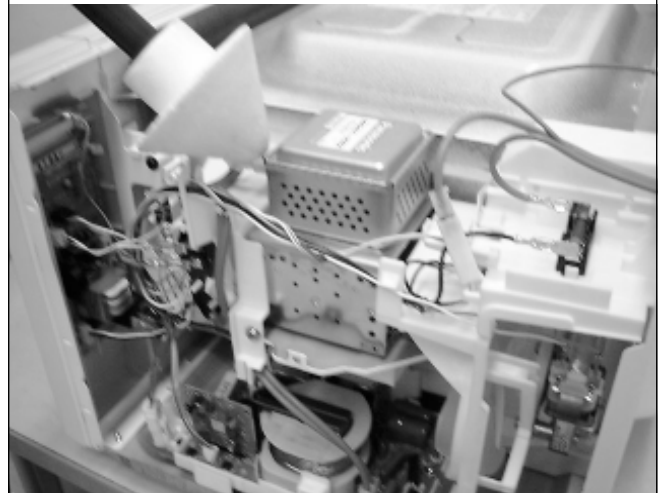
- (A) After any adjustment or repair to a microwave oven, a leakage reading must be taken. Record this leakage reading on the repair ticket even if it is zero.
A copy of this repair ticket and the microwave leakage reading should be kept by repair facility.

- (B) Should the radiation leakage be more than 2 mW/cm² (1mW/cm² for Canada) after determining that all parts are in good condition, functioning properly, and genuine replacement parts as listed in this manual have been used, immediately notify PASC, PSC or PCI.

4. At least once a year, have the radiation monitor checked for calibration by its manufacturer.

WARNING

AVOID CONTACTING ANY HIGH VOLTAGE PARTS.



01-035

MOVE PROBE ALONG SHADED AREA(/////)/AROUND EXHAUST OPENINGS(as shown)AND AROUND AIR INLET OPENING

TROUBLESHOOTING GUIDE

CAUTION

1. Check grounding before checking for trouble.
2. Be careful of high voltage circuit.
3. Discharge high voltage capacitor.
4. When checking the continuity of the switches or the high voltage transformer, disconnect one lead wire from these parts and then check continuity with the AC plug removed. To do otherwise may result in a false reading or damage to your meter. When disconnecting a plastic connector from a terminal, you must hold the plastic connector instead of the lead wire and then disconnect it, otherwise lead wire may be damaged or the connector cannot be removed.
5. Do not touch any parts of the circuitry on the digital programmer circuit, since static electric discharge may damage this control panel.
Always touch yourself to ground while working on this panel to discharge any static charge in your body.
6. 120V AC is present on the digital programmer circuit (Terminals of power relay's and primary circuit of low voltage transformer). When troubleshooting, be cautious of possible electrical shock hazard.

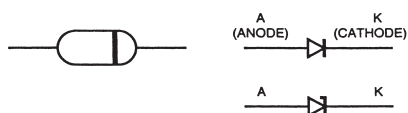
First of all operate the microwave oven following the correct operating procedures in order to find the exact cause of any trouble.

	SYMPTOM	CAUSE	CORRECTIONS
1.	Oven is dead. Fuse is OK. No display and no operation at all.	1. Open or loose lead wire harness 2. Open thermal cutout (Cavity) 3. Open low voltage transformer 4. Defective DPC	Check fan motor when thermal cutout is defective.
2.	No display and no operation at all. Fuse is blown.	1. Shorted lead wire harness 2. Defective primary latch switch (NOTE 1) 3. Defective short switch (NOTE 1) 4. Defective Inverter Power Supply (U) (Page 18) NOTE 1: All of these switches must be replaced at the same time. Check continuity of power relay (RY1)'s contacts (between 1 and 2) and if it has continuity, replace power relay B (RY-1)'s.	Check adjustment of primary, secondary latch switch and short switch including door.
3.	Oven does not accept key input(Program)	1. Key input is not in sequence 2. Open or loose connection of membrane key pad to DPC (Flat cable) 3. Shorted or open membrane key board 4. Defective DPC	Refer to operation procedure. Refer to DPC troubleshooting.
4.	Fan motor turn on when oven is plugged in with door closed.	1. Misadjustment or loose wiring of secondary latch switch 2. Defective secondary latch switch	Adjust door and latch switches.
5.	Timer starts count down but no microwave oscillation. (No heat while oven lamp and fan motor turn on)	1. Off-alignment of latch switches 2. Open or loose connection of high voltage circuit especially magnetron filament circuit NOTE: Large contact resistance will bring lower magnetron filament voltage and causing magnetron to lower output and/or be intermittent. 3. Defective high voltage component HV Inverter Power Supply (u) Magnetron 4. Open or loose wiring of power relay B (RY-1) 5. Defective primary latch switch 6. Defective DPC or power relay B (RY-1)	Adjust door and latch switches. Check high voltage component according to component test procedure and replace if it is defective. Refer to DPC troubleshooting Adjust door and latch switches.
6.	Oven can program but timer does not start count-down.	1. Open or loose wiring of secondary latch switch 2. Off-alignment of secondary latch switch 3. Defective secondary latch switch	
7.	Microwave output is low. Oven takes longer time to cook food.	1. Decrease in power source voltage 2. Open or loose wiring of magnetron filament circuit.(Intermittent oscillation) 3. Aging change of magnetron	Consult electrician
8.	Fan motor turns on and turntable rotates when door is opened.	1. Shorted primary latch switch	

7.	Oven does not operate and return to plugged in mode as soon as start pad is pressed.	1. Defective DPC	Check tighten screws on escutcheon base bracket, D.P.C. board.
8.	Loud buzzing noise can be heard.	1. Loose fan and fan motor	
9.	Turntable motor does not rotate.	1. Open or loose wiring of turntable motor 2. Defective turntable motor	
10.	Oven stops operation during cooking.	1. Open or loose wiring of primary and secondary latch switch 2. Operation of thermal cutout	Adjust door and latch switches.
11.	Oven returns to plugged in mode after 10 seconds elapses on the Auto sensor cooking mode.	1. Open or loose wiring of sensor terminal from DPC 2. Open steam sensor 3. Defective DPC	

HOW TO CHECK THE SEMICONDUCTORS USING AN OHM METER

Diode



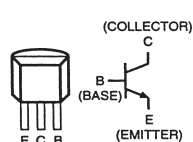
	FORWARD	REVERSE
A-K	SMALL	∞

Transistor

NPN Transistor

2SC.....

2SD.....

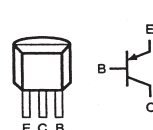


	FORWARD	REVERSE
B-E	SMALL	∞
B-C	SMALL	∞
C-E	∞	∞

PNP Transistor

2SA.....

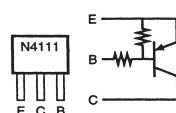
2SB.....



	FORWARD	REVERSE
B-E	SMALL	∞
C-B	SMALL	∞
C-E	∞	∞

Digital Transistor

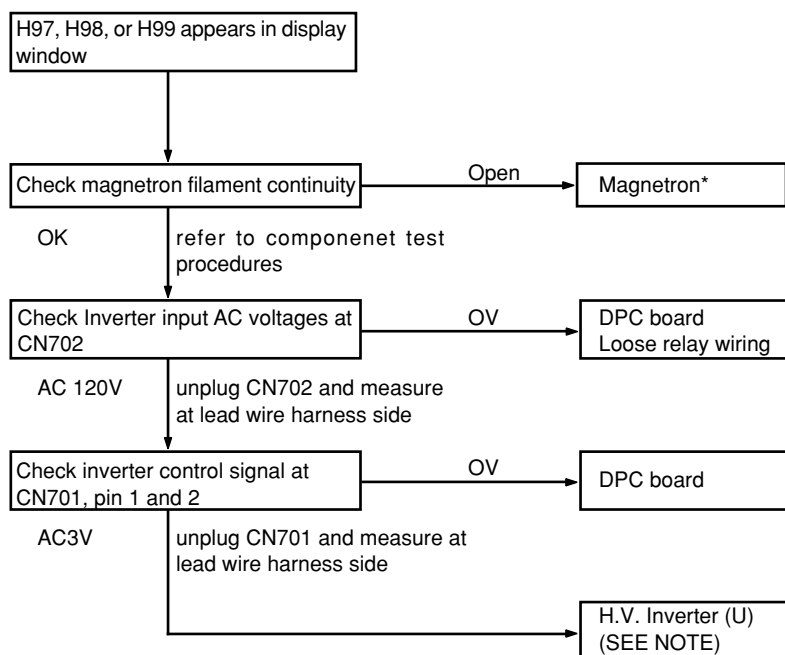
PNP Transistor



	FORWARD	REVERSE
E-B	10k Ω ~ 30k Ω	10k Ω ~ 30k Ω
C-B	50k Ω ~ 90k Ω	∞
C-E	40k Ω ~ 80k Ω	∞

Troubleshooting of Inverter Circuit (U) and Magnetron **NEW H.V.**

This oven is programmed with a self diagnostics failure code system which will help for troubleshooting. H97, H98, and H99 are the provided failure codes to indicate magnetron and inverter circuit problem areas. This section explains failure codes of H97, H98, and H99. First, you must program the DPC by pressing [Clock], [Time], [Start], [Power Level]. Program unit for operation. H97, H98, H99 appears in display window a short time after start key is pressed and there is no microwave oscillation.



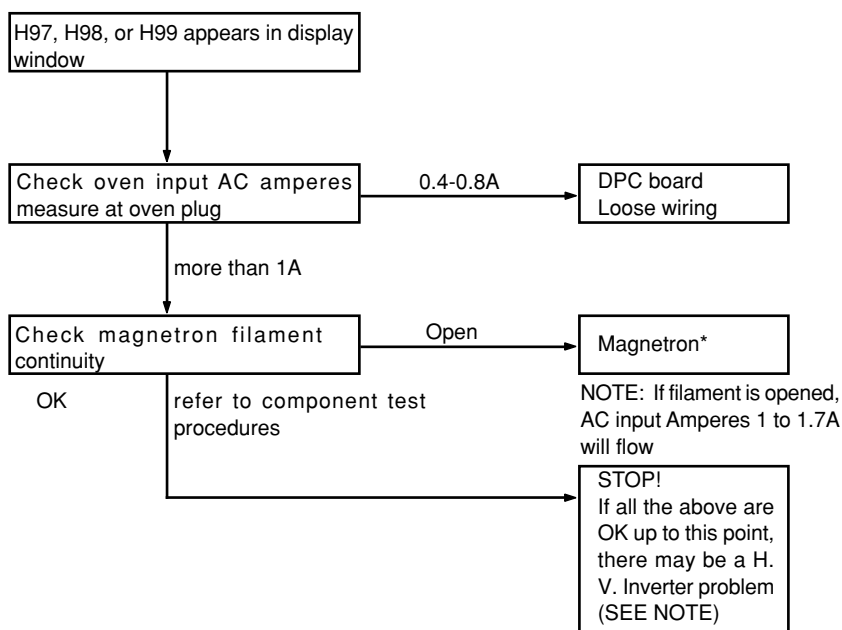
NOTE: After check, unplug unit to reset to normal operation mode.

NOTE: DO NOT try to repair this Inverter Power Supply (U) and also DO NOT RE-ADJUST PRESET VOLUME on the board. It is very dangerous to repair or adjust without sufficient test equipment because this circuit handles very high voltage and very large current. Off alignment of inverter board operation is dangerous. Operating a misaligned Inverter circuit is dangerous due to the very high voltage and current that is produced by this board. Defective boards must be replaced with a new one.

* Check magnetron filament for open or short to casing before proceeding to determine a good magnetron.

Alternate way to troubleshoot oven with AC Ampere meter used

H97, H98, H99 appears in display window a short time after start key is pressed and no microwave oscillation with AC Ampere meter used for troubleshooting



NOTE: After check, unplug unit to reset to normal operation mode.

NOTE: DO NOT try to repair this Inverter Power Supply (U) and also DO NOT

RE-ADJUST PRESET VOLUME on the board. It is very dangerous to repair or adjust without sufficient test equipment because this circuit handles very high voltage and very large current. Off alignment of inverter board operation is dangerous. Operating a misaligned Inverter circuit is dangerous due to the very high voltage and current that is produced by this board. Defective boards must be replaced with a new one.

* Check magnetron filament for open or short to casing before proceeding to determine a good magnetron.

Trouble Related to Digital Programmer Circuit

SYMPTOM	STEP	CHECK	RESULT	CAUSE/CORRECTIONS
No display when oven is first plugged in. Oven is dead.	1	Fuse pattern of DPC	Normal Open (NOTE)	STEP 2 Shorted Circuit of ZNR, L.V.T., Oven Lamp etc. Replace DPC
	2	Low voltage transformer (LVT) secondary voltage	Abnormal 0V Normal	LVT → Step 3
	3	IC-1 pin 8 voltage (Emitter of Q10)	Abnormal Normal = 5V	ZD10, Q10 → Step 4
	4	IC-1 pin 10 voltage (15 pin of IC-220)	Abnormal Normal	IC-220 → IC-1, CX320

NOTE

Procedure of fuse pattern repairing is as follows:

1. When the fuse pattern (PF2) opens.

(1) Remove the jumper wire (PF1).

(2) Insert the removed jumper wire (PF1) to "(PF2)" position and solder it. If both "PF1" and "PF2" fuse patterns are open, please replace DPC.

2. When the fuse pattern (PF4) opens.

(1) Remove the jumper wire (PF3).

(2) Insert the removed jumper wire (PF3) to "(PF4)" position and solder it. If both "PF3" and "PF4" fuse patterns are open, please replace DPC.

NOTE:* At the time of these repairs, make visual inspection of the varistor for burning damage and examine the transformer with tester for the presence of layer short-circuit (check primary coil resistance).

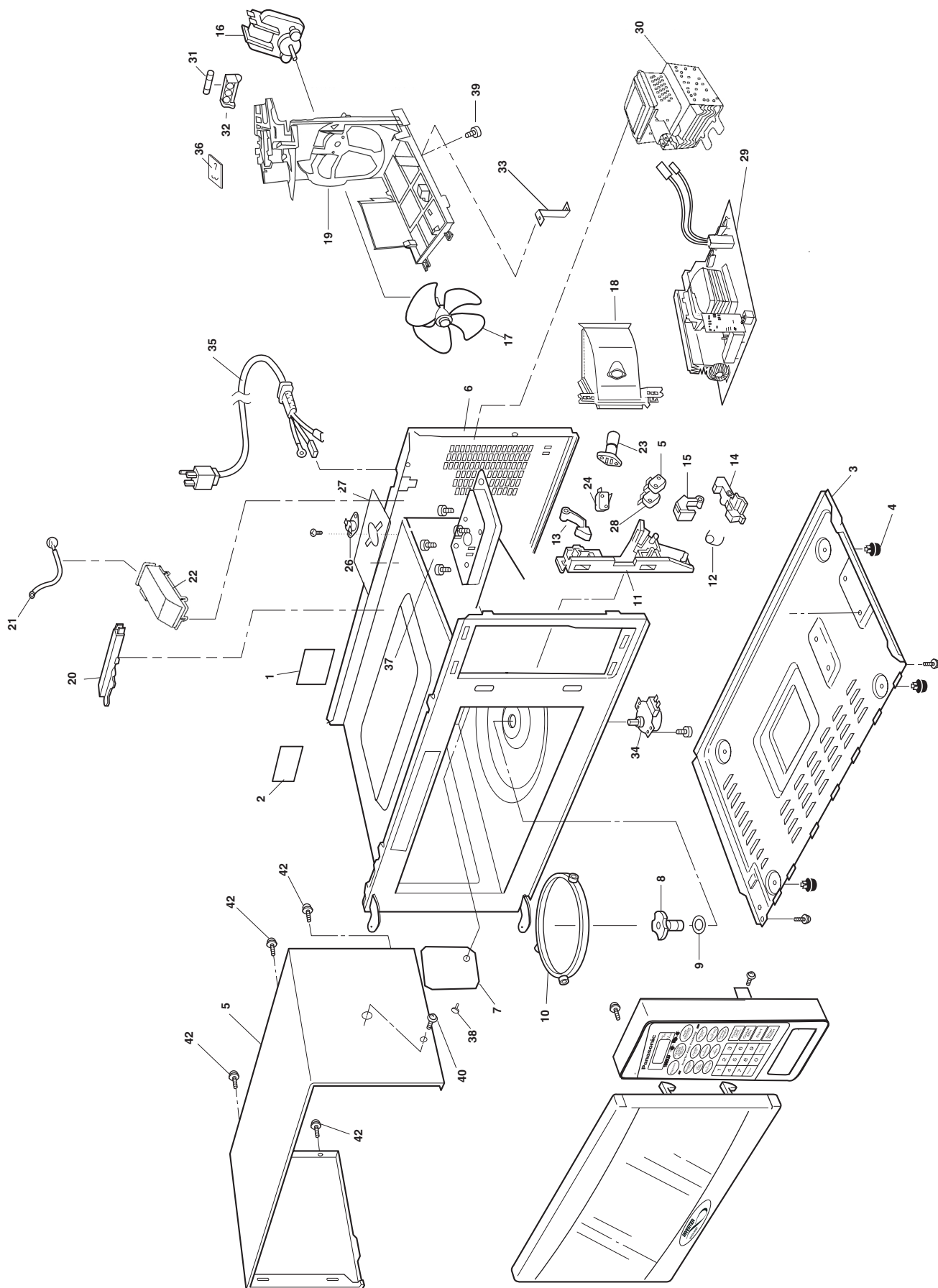
If any abnormal condition is detected, replace the defective parts.

SYMPTOM	STEP	CHECK	RESULT	CAUSE/CORRECTIONS
No key input	1	Membrane switch continuity	Abnormal	Membrane switch
			Normal	IC-1
No beep sound	1	IC-1 pin 31 voltage	Abnormal	IC-1
			Normal	BZ, IC-220
Power relay A(RY-2) does not turn on even though the program has been set and the start pad is tapped	1	IC-1 pin 32 voltage while operation	Abnormal	IC-1
			Normal = 5V	→ Step 2
	2	Short circuit between pin 6 and pin 16 of IC-220	Still not turn on	RY-2
			RY-2 turns on	IC-220
No microwave oscillation at any power setting	1	IC-1 pin 38 and pin 39 voltages while operation at high power	Abnormal	IC-1
			5---5V, 15---5V	→ Step 2
	2	Q220 transistor	Abnormal	Q220
			Normal	IC-220, RY-1
Dark or unclear display	1	Replace display and check operation	Normal	DISPLAY
			Abnormal	IC-1
Missing or lighting of unnecessary segment	1	Replace IC-1 and check operation	Normal	IC-1
			Abnormal	DISPLAY
H97/H98 appears in window and oven stops operation. Program High power for 1 minute and conduct following test quickly, unless H97/H98 appears and oven stops. NEW H.V.	1	Unplug CN702(2 pin) connector and measure voltage between terminals	0V	1. Latch Switch 2. DPC/Power Relay
			AC line voltage of 120V	→ Step 2
	2	Unplug CN701(3 pin) connector and measure pin 1 voltage	0V	DPC
			Approx. AC 3V	Magnetron

TO BE CONTINUED FOR SENSOR MODELS

Auto sensor cooking does not operate normally. (Steam Sensor cooking does not detect steam from foods.)	1	Steam sensor terminal voltage by using high impedance tester (20k Ω /V), when breathe on metal surface of sensor	Abnormal = 0V	Steam sensor
			Normal > 10~30mV	IC-1

EXPLODED VIEW AND PARTS LIST



PARTS LIST

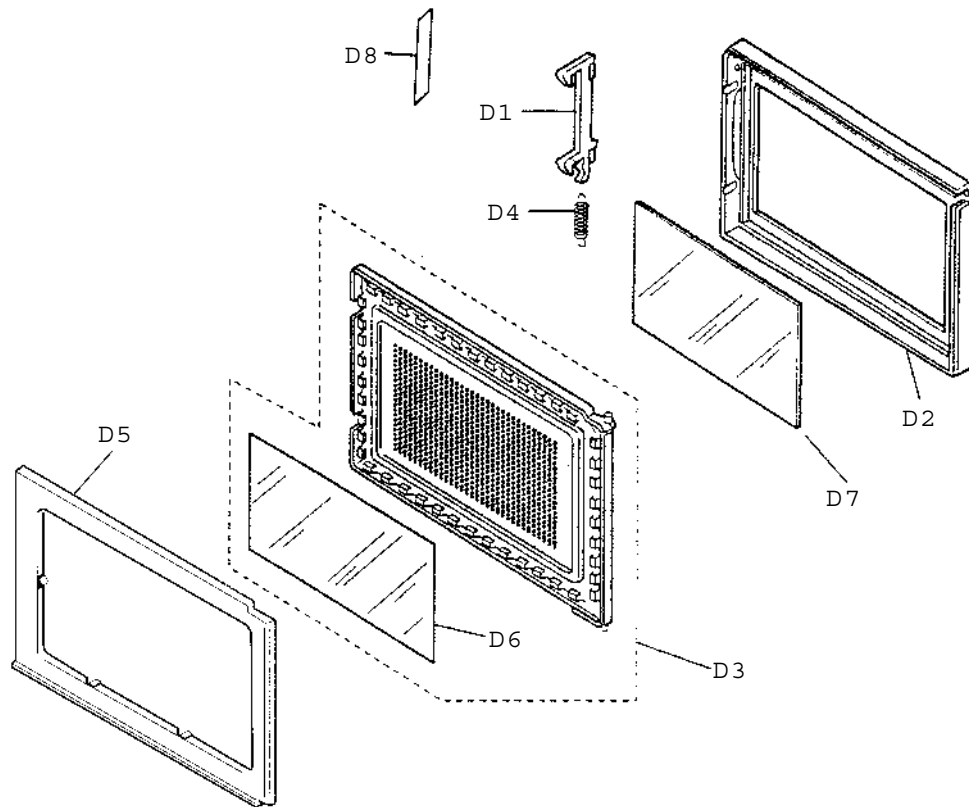
NOTE 1: When ordering replacement part(s), please use part number(s) shown in this part list.
Do not use description of the part.

2: Important safety notice:
Components identified by  mark have special characteristics important for safety.
When replacing any of these components, use only manufacture's specified parts.

Ref.No.		Part No.	Part name & Description	Pcs/ set	Remarks
1		F00069660AP	CAUTION LABEL	1	*****APH
1		F00067600CP	CAUTION LABEL	1	*****CPH
2		F00074T00BAP	NAME PLATE	1	S560BFAPH
2		F00074T00HAP	NAME PLATE	1	S560WFAPH
2		F00074T00BCP	NAME PLATE	1	S560BFCPH
2		F00074T00HCP	NAME PLATE	1	S560WFCPH
2		F00074T10BAP	NAME PLATE	1	S550BFAPH
2		F00074T10HAP	NAME PLATE	1	S550WFAPH
2		F00074T20BAP	NAME PLATE	1	S540BFAPH
2		F00074T20HAP	NAME PLATE	1	S540WFAPH
2		F00074T20BCP	NAME PLATE	1	S540BFCPH
2		F00074T20HCP	NAME PLATE	1	S540WFCPH
2		F00074T30BAP	NAME PLATE	1	L530BFAPH
2		F00074T30HAP	NAME PLATE	1	L530WFAPH
2		F00074T30HCP	NAME PLATE	1	L530WFCPH
2		F00074T40HCP	NAME PLATE	1	L520WFCPH
2		F00074T50HCP	NAME PLATE	1	S510WFCPH
3		F10014T00AP	BASE	1	
4		F10084T00AP	RUBBER FOOT	4	
5		F110D4T00BAP	CABINET BODY (U)	1	****BF*PH
5		F110D4T00HAP	CABINET BODY (U)	1	****WF*PH
6		F201A4T00AP	OVEN (U)	1	S560*F*PH
6		F201A4T10AP	OVEN (U)	1	EXCEPT S560*F*PH
7		F20554T00AP	COVER	1	
8		F21314T00AP	PULLY SHAFT	1	
9		ANE2177-F80	WASHER	1	
10		B290D9330AP	ROLLER RING (U)	1	
11		B3020-1480	DOOR HOOK	1	
12		J3097-1480	LATCH SPRING	1	
13		B3136-1480	HOOK LEVER A	1	
14		B3137-1480	HOOK LEVER B	1	
15		B3138-1480	HOOK LEVER C	1	

Ref.No.		Part No.	Part name & Description	Pcs/ set	Remarks
16		F400A4T00AP	FAN MOTOR	1	AC120V, SINGLE PHASE, 60Hz
17		F40084T00AP	FAN BLADE	1	
18		F40254T00AP	AIR GUIDE A	1	
19		F41444T00AP	ORIFICE	1	
20		F64505540AP	EXHAUST GUIDE B	1	S560*F*PH
21		A707S4T00AP	STEAM SENSOR	1	S560*F*PH
22		F65434T00AP	SENSOR BRACKET C	1	S560*F*PH
23		F612E9660AP	INCANDESCENT LAMP(U)	1	125V, 60Hz, 20W
24	△	ANE6142-1450	MICROSWITCH B	1	(V-16G-3C25L)
25	△	J61414T00AP	MICROSWITCH A	1	(D3V-16G-3C25)
26	△	F61454050AP	THERMAL CUTOFF	1	120°C, *****CPH
27		F66264T00CP	THERMAL CUTOFF MOUNT	1	*****CPH
28	△	A61785180AP	MICROSWITCH C	1	(SHORT SWITCH) (D3V-1G-2C25)
29	△	A606Y4T00AP	H.V.INVERTER (U)	1	
30	△	2M261-M32F	MAGNETRON	1	S560*FAPH, S550*FAPH
30	△	2M261-M32G	MAGNETRON	1	S560*FCPH
30	△	2M258-M32F	MAGNETRON	1	S540*FAPH, L530*FAPH
30	△	2M258-M32G	MAGNETRON	1	S540*FCPG, L530WFCPH,L520WFCPH,S510WFCPH
31	△	B62308250AP	FUSE	1	18A/120V,60Hz
32		B62314000AP	FUSE HOLDER	1	*****APH
33		F61844T00AP	GROUNDING PLATE	1	
34		B63264080AP	TURNTABLE MOTOR	1	
35	△	F900C9660AP	AC CORD W/PLUG	1	*****APH
35	△	F900C9660CP	AC CORD W/PLUG	1	*****CPH
36		A692Y4T00CP	NOISE FILTER (U)	1	*****CPH
37		XTWANE+10RU	SCREW	4	FOR MAGNETRON
38		XST4+5VS	SCREW	1	FOR COVER
39		XYD4+EE12F	SCREW	1	FOR H.V.INVERTER EARTH
40		XTCA4+12AFK	SCREW	1	FOR CABINET BODY SIDE

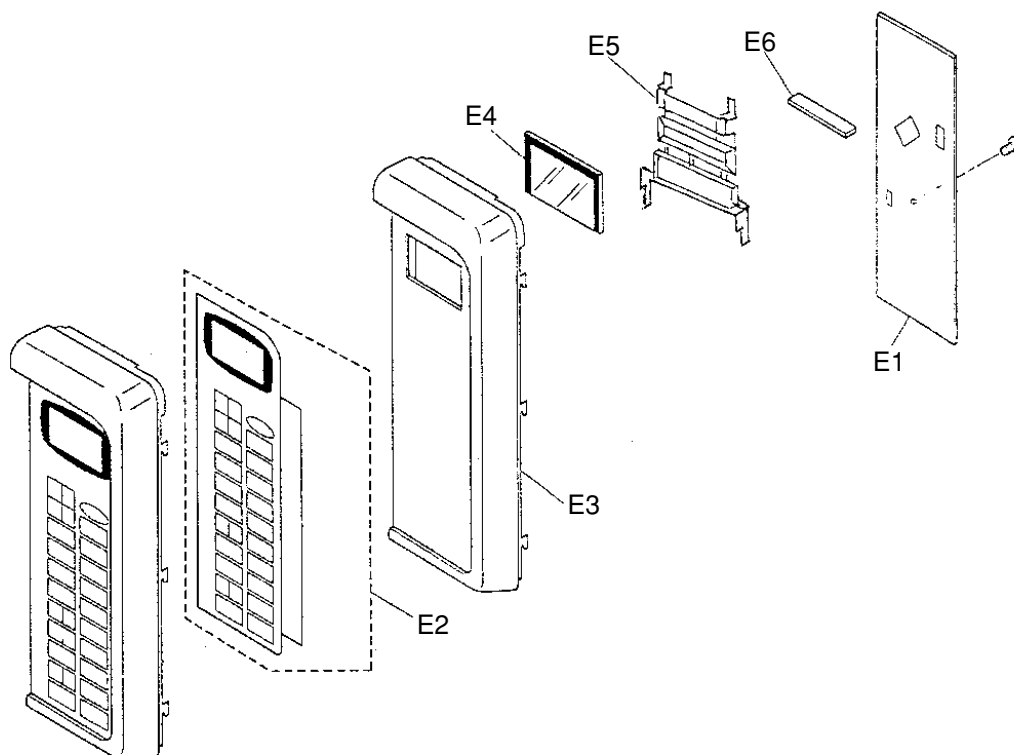
DOOR ASSEMBLY



(S-4T0)

Ref.No.		Part No.	Part name & Description	Pcs/ set	Remarks
D1		B3018-1480	DOOR KEY #A	1	
D2	△	F30014T00BAP	DOOR A	1	****BF*PH
D2	△	F30014T00HAP	DOOR A	1	****WF*PH
D3	△	F302K4T00AP	DOOR E (U)	1	
D4		B30214000AP	DOOR KEY SPRING	1	
D5	△	F30854T00AP	DOOR C	1	
D6	△	F31454T00AP	DOOR SCREEN A	1	
D7		F31464T00BAP	DOOR SCBEEN B	1	****BF*PH
D7		F31464T00HAP	DOOR SCREEN B	1	****WF*PH
D8		B02454180AP	DHHS LABEL	1	*****FAPH
D8		B04114180CP	CSA LABEL	1	*****FCPH

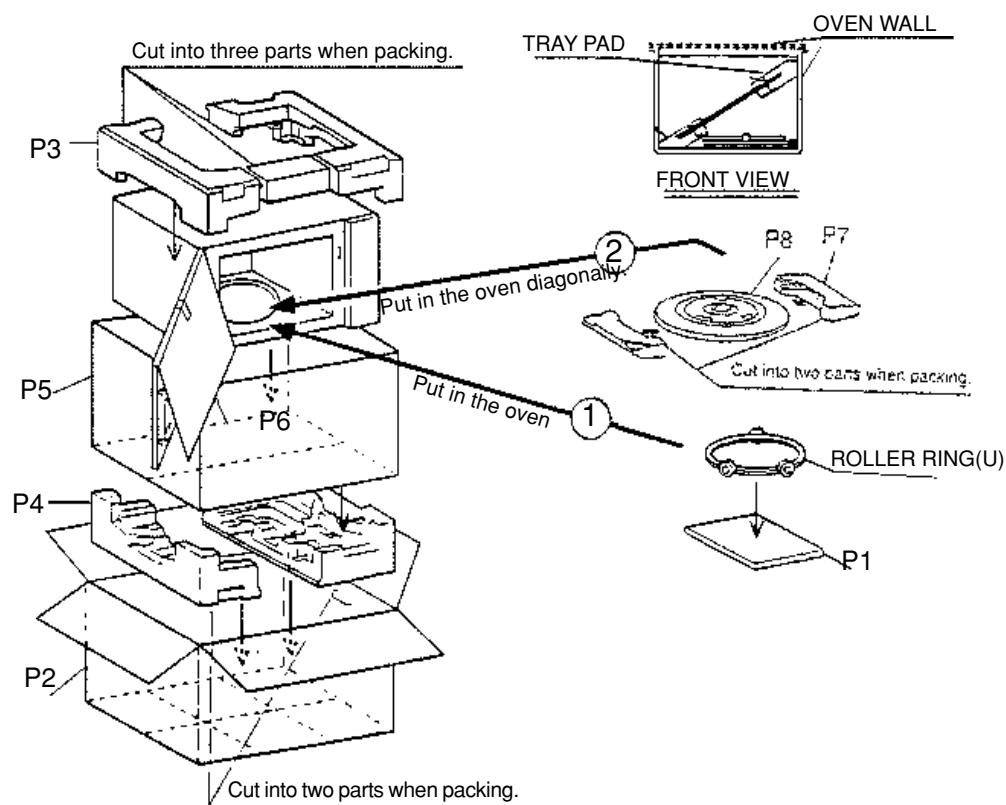
ESCUTHEON BASE ASSEMBLY



(S-4T0)

Ref.No.	Part No.	Part name & Description	Pcs/ set	Remarks
E1	F603L4T00AP	D.P.CIRCUIT	1	S560BFAPH/S560WFAPH RTL (W/COMPONENT)
E1	F603L4T00CP	D.P.CIRCUIT	1	S560BFCPH/S560WFCPH RTL (W/COMPONENT)
E1	F603L4T10AP	D.P.CIRCUIT	1	S550BFAPH/S550WFAPH RTL (W/COMPONENT)
E1	F603L4T20AP	D.P.CIRCUIT	1	S540BFAPH/S540WFAPH RTL (W/COMPONENT)
E1	F603L4T20CP	D.P.CIRCUIT	1	S540BFCPH/S540WFCPH RTL (W/COMPONENT)
E1	F603L4T30AP	D.P.CIRCUIT	1	L530BF/WFAPH RTL (W/COMPONENT)
E1	F603L4T30CP	D.P.CIRCUIT	1	L530WF/L520WFCPH RTL (W/COMPONENT)
E1	F603L4T50CP	D.P.CIRCUIT	1	S510WFCPH RTL (W/COMPONENT)
E2	F603Y4T00BAP	MEMBRANE SWITCH (U)	1	S560BFAPH
E2	F630Y4T00HAP	MEMBRANE SWITCH (U)	1	S560WFAPH
E2	F630Y4T00BCP	MEMBRANE SWITCH (U)	1	S560BFCPH
E2	F630Y4T00HCP	MEMBRANE SWITCH (U)	1	S560WFCPH
E2	F630Y4T10BAP	MEMBRANE SWITCH (U)	1	S550BFAPH
E2	F630Y4T10HAP	MEMBRANE SWITCH (U)	1	S550WFAPH
E2	F630Y4T20BAP	MEMBRANE SWITCH (U)	1	S540BFAPH/S540BFCPH
E2	F630Y4T20HAP	MEMBRANE SWITCH (U)	1	S540WFAPH/S540WFCPH
E2	F630Y4T30BAP	MEMBRANE SWITCH (U)	1	L530BFAPH
E2	F630Y4T30HAP	MEMBRANE SWITCH (U)	1	L530WFAPH/L530WFCPH
E2	F630Y4T40HCP	MEMBRANE SWITCH (U)	1	L520WFCPH
E2	F630Y4T50HCP	MEMBRANE SWITCH (U)	1	S510WFCPH
E3	F80344T00BAP	ESCUTCHEON BASE	1	S560BFAPH/S550BFAPH/S540BFAPH/L530BFAPH
E3	F80344T00HAP	ESCUTCHEON BASE	1	S560WFAPH/S550WFAPH/S540WFAPH/L530WFAPH
E3	F80344T50BCP	ESCUTCHEON BASE	1	S560WFCPH/S540BFCPH
E3	F80344T50HCP	ESCUTCHEON BASE	1	S560WFCPH/S540WFCPH/L530WFCPH/L520WFCPH/S510WFCPH
E4	AEDDRCD4T0AP	DISPLAY	1	
E5	F66174T00AP	DISPLAY TUBE COVER	1	
E6	A67004T00AP	RUBBER CONNECTOR	1	

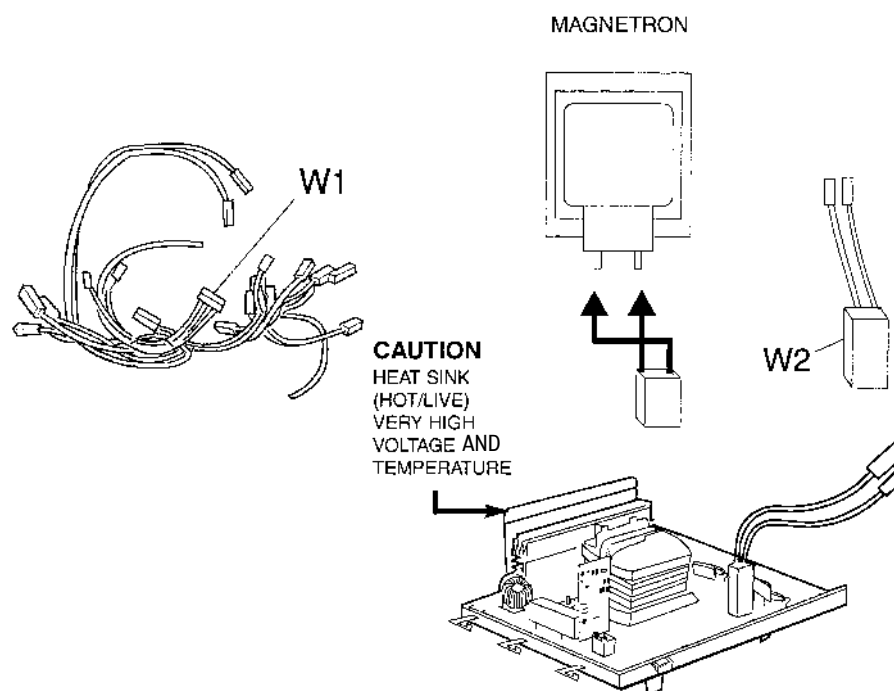
PACKING AND ACCESORIES



(S-4T0)

Ref.No.	Part No.	Part name & Description	Pcs/ set	Remarks
P1	F00034T00AP	INSTRUCTION MANUAL	1	S560BFAPH/S560WFAPH
P1	F00034T00CP	INSTRUCTION MANUAL	1	S560BFCPH/S560WFCPH
P1	F00034T10AP	INSTRUCTION MANUAL	1	S550BFAPH/S550WFAPH
P1	F00034T20AP	INSTRUCTION MANUAL	1	S540BF/WFAPH,L530BF/WFAPH
P1	F00034T20CP	INSTRUCTION MANUAL	1	S540BFCPH/S540WFCPH
P1	F00034T30CP	INSTRUCTION MANUAL	1	L530WFCPH
P1	F00034T40CP	INSTRUCTION MANUAL	1	L520WFCPH
P1	F00034T50CP	INSTRUCTION MANUAL	1	S510WFCPH
P2	F01024T00BAP	PACKING CASE,PAPER	1	S560BFAPH
P2	F01024T00HAP	PACKING CASE,PAPER	1	S560WFAPH
P2	F01024T00BCP	PACKING CASE,PAPER	1	S560BFCPH
P2	F01024T00HCP	PACKING CASE,PAPER	1	S560WFCPH
P2	F01024T10BAP	PACKING CASE,PAPER	1	S550BFAPH
P2	F01024T10HAP	PACKING CASE,PAPER	1	S550WFAPH
P2	F01024T20BAP	PACKING CASE,PAPER	1	S540BFAPH
P2	F01024T20HAP	PACKING CASE,PAPER	1	S540WFAPH
P2	F01024T20BCP	PACKING CASE,PAPER	1	S540BFCPH
P2	F01024T20HCP	PACKING CASE,PAPER	1	S540WFCPH
P2	F01024T30BAP	PACKING CASE,PAPER	1	L530BFAPH
P2	F01024T30HAP	PACKING CASE,PAPER	1	L530WFAPH
P2	F01024T30HCP	PACKING CASE,PAPER	1	L530WFCPH
P2	F01024T40HCP	PACKING CASE,PAPER	1	L520WFCPH
P2	F01024T50HCP	PACKING CASE,PAPER	1	S510WFCPH
P3	F01044T00AP	UPPER FILLER	1	
P4	F01054T00AP	LOWER FILLER	1	
P5	B01068290AP	P.E.BAG	1	
P6	B01075640AP	DOOR SHEET	1	
P7	F01134T00AP	TRAY STYROL	1	
P8	A06014T00AP	COOKING TRAY	1	

WIRING MATERIAL



(S-4T0)

Ref.No.		Part No.	Part name & Description	Pcs/ set	Remarks
W1		F030A4T20AP	LEAD WIRE HARNESS	1	*****APH
W1		F030A4T00CP	LEAD WIRE HARNESS	1	*****CPH
W2		F030E4T00AP	H.V. LEAD WIRE	1	*****APH
W2		F030E4T00CP	H.V. LEAD WIRE	1	*****CPH

DIGITAL PROGRAMMER CIRCUIT

(NN-S560BFAPH/CPH,S560WFAPH/CPH)

PARTS LIST

Ref.No.	Part No.	Part name & Description	Pcs/ Set	Remarks
BZ310	AEFB22EP20TL	BUZZER	1	2.0KHz
C12,C290,C291,C300,C301	AECUB2F104ZK	CAPACITOR	5	0.1μF/25V
C330	AECUB5C102KK	CAPACITOR	1	0.1μF/50V
C340	AECUB5F103ZK	CAPACITOR	1	0.01μF/50V
C10	ECEA1VM471B	ELECTROLYTIC CAPACITOR A	1	470μF/35V
C11	ECEA1CKA100B	ELECTROLYTIC CAPACITOR A	1	10μF/16V
CN1	AEEMXF01505W	CONNECTOR	1	
CN2	AEEMMF00703W	CONNECTOR	1	
CN3	AEEMXF00703B	CONNECTOR	1	
CN4	AEEMXF00F04W	CONNECTOR	1	
CX320	AEFOS800MG06	CERAMIC RESONATOR	1	6.8MHz
D180,D181,D182,D183	AESQSM1210MT	LED	4	
D10	AESSIN4003E	DIODE,SI	1	
D40,D41,D220,D221	MA196-(TA5)	DIODE,SI	4	
D25	AERZ271NS10D	VARISTOR	1	
D26,27	AERZB00NS10D	VARISTOR	2	
IC1	MN101C487DB1	L.S.I	1	
IC220	AN6747B	IC	1	
Q181,Q40,Q220	2SC2412KT146	TRANSISTOR	3	
Q10,Q180	2SD1859TV2Q	TRANSISTOR	2	
R100,R101,R102,R221	AERJ3GSYJ103	RESISTOR	4	10K,1/16W,50%
R40,R41,R42,R43,44,R45, R46,R47,R48	AERJ3GSYJ104	RESISTOR	9	100K,1/16W,50%
R49	AERJ3GSYJ154	RESISTOR	1	150K,1/16W,5%
R220	AERJ3GSYJ222	RESISTOR	1	2.2K,1/16W,5%
R310	AERJ3GSYJ332	RESISTOR	1	3.3K,1/16W,5%
R330	AERJ3GSYJ333	RESISTOR	1	3.3K,1/16W,5%
R181	AERJ3GSYJ360	RESISTOR	1	36Ω,1/4W,5%
R480,R481	AERJ3GSYJ472	RESISTOR	2	4.7K,1/4W,5%
R311	RD16ST102J	RESISTOR	1	1K,1/4W,5%
R180,R290	RD16ST103J	RESISTOR	2	10K,1/4W,5%
R340	RD16ST104J	RESISTOR	1	100K,1/4W,5%
R10,R11	RD16ST751J	RESISTOR	2	750Ω,1/4W,5%
RY1	AEGG5G1A12	POWER RELAY	1	
IC480	AEHMH705S	SENSOR IC	1	
T10	AETP284T0AP	LOW VOLTAGE TRANSFORMER	1	
ZD10	AESZMTAJ5R6B	ZENER DIODE	1	

DIGITAL PROGRAMMER CIRCUIT

(NN-S530BFAPH/CPH,S540BFAPH/CPH,S540WFAPH/CPH,L530BFAPH/CPH,
L530WFAPH/CPH,L520WFAPH/CPH,L510WFAPH/CPH)

PARTS LIST

Ref.No.	Part No.	Part name & Description	Pcs/ Set	Remarks
BZ310	AEFB22EP20TL	BUZZER	1	2.0KHz
C12,C290,C291,C300,C301	AECUB2F104ZK	CAPACITOR	5	0.1MF/25V
C330	AECUB5C102KK	CAPACITOR	1	0.1MF/50V
C340	AECUB5F103ZK	CAPACITOR	1	0.01MF/50V
C10	ECA1VM471B	ELECTROLYTIC CAPACITOR AL	1	470MF/35V
C11	ECEA1CKA100B	ELECTROLYTIC CAPACITOR AL	1	10MF/16V
CN1	AEEMXF01505W	CONNECTOR	1	
CN3		CONNECTOR	1	
CN4	AEEMXF00F04W	CONNECTOR	1	
CX320	AEFOS800MG06	CERAMIC RESONATOR	1	6.8MHz
D180,D181,D182,D183	AESQSM1210MT	LED	4	
D10	AESSIN4003E	DIODE,SI	1	
D40,D41,D220,D221	MA196-(TA5)	DIODE,SI	4	
D25	AERZ271NS10D	VARISTOR	1	
IC1	MN101C487DB1	L.S.I	1	
IC220	AN6747B	IC	1	
Q181,Q40,Q220	2SC2412KT146	TRANSISTOR	3	
Q10,Q180	2SD1859TV2Q	TRANSISTOR	2	
R100,R101,R102,R221	AERJ3GSYJ103	RESISTOR	4	10K,1/16W,5%
R40,R41,R42,R43,R44,R45, R46,R47,R48	AERJ3GSYJ104	RESISTOR	9	100K,1/16W,5%
R49	AERJ3GSYJ154	RESISTOR	1	150K,1/16W,5%
R220	AERJ3GSYJ222	RESISTOR	1	2.2K,1/16W,5%
R310	AERJ3GSYJ332	RESISTOR	1	3.3K,1/16W,5%
R330	AERJ3GSYJ333	RESISTOR	1	3.3K,1/16W,5%
	AERJ3GSYJ360	RESISTOR	1	36Ω,1/4W,5%
	RD16ST102J	RESISTOR	1	1K,1/4W,5%
R180,R290	RD16ST103J	RESISTOR	2	10K,1/4W,5%
R340	RD16ST104J	RESISTOR	1	100K,1/4W,5%
R10,R11	RD16ST751J	RESISTOR	2	750Ω,1/4W,5%
RY1	AEGG5G1A12	POWER RELAY	1	
T10	AETP284T0AP	LOW VOLTAGE TRANSFORMER	1	
ZD10	AESZMTZJ5R6B	ZENER DIODE	1	

Model for Latin America & Mexico

MODELS	RPH	
	Mexico	Latin America
NN-S540BF/WF		○
NN-540BF/WF	○	○

- * This product is based on NN-S540BF/WF APH model, the different parts are listed as followings:
- * Any serviceman who has any quires or order service parts, please contact own area's service company

Ref.No.		Part No.	Part name & Description	Pcs/ Set	Remarks
2		F00074T20BRP	NAME PLATE	1	NN-S540BF
2		F00074T20HRP	NAME PLATE	1	NN-S540WF
2		F00074T70BRP	NAME PLATE	1	NN-540BF
2		F00074T70HRP	NAME PLATE	1	NN-540WF
E1		F603L4T70RP	D.P.CIRCUIT	1	NN-S540BF/WF, NN-540BF/WF
E2		F603Y4T20BAP	MEMBRANE SWITCH(U)	1	NN-S540BF
E2		F603Y4T20HAP	MEMBRANE SWITCH(U)	1	NN-S540WF
E2		F603Y4T70BRP	MEMBRANE SWITCH(U)	1	NN-540BF
E2		F603Y4T70HRP	MEMBRANE SWITCH(U)	1	NN-540WF
P1		F00034T20RP	INSTRUCTION MANUAL	1	NN-S540BF/WF, NN-540BF/WF
P2		F01024T20BAP	PACKING CASE, PAPER	1	NN-S540BF
P2		F01024T20HAP	PACKING CASE, PAPER	1	NN-S540WF
P2		F01024T70BRP	PACKING CASE, PAPER	1	NN-540BF
P2		F01024T70HRP	PACKING CASE, PAPER	1	NN-540WF